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COLT M.A.R.C.
901 SERIES

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6 ON THE COVER:
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GUN TEST

COLT MARC

901 SERIES

MODULAR AR CARBINES THAT QUICKLY TRANSFORM FROM 7.62MM TO 5.56MM TO TACKLE ANY THREAT!

BY MICHAEL O. HUMPHRIES



COLT AR901-16S

“Recognizing that having access to both the 7.62mm and 5.56mm gives you greater operational flexibility, why not acquire a weapon system that can employ both?”



Colt's new AR901-16S carbine in 7.62mm NATO (above left) delivers top-tier performance in an affordable, reliable package. Shown equipped with a Vortex StrikeFire II red-dot sight.



COLT LE901-16SE

In military and tactical circles, the debate regarding the benefits of the .308 Winchester/7.62mm NATO versus the 5.56mm NATO rages on to this day.

The 7.62mm round, which found its first home in the U.S. M14 rifle, delivers a large, heavy bullet with impressive long-range performance and power. The 5.56mm, made famous in the M16 family of weapons, delivers lighter recoil and increased ammunition capacity for the same weight. Each round has its proponents and detractors, with each having benefits for certain missions and situations. Wouldn't the best solution be simply to develop one weapon platform that can fire both?

Unfortunately, this is much easier said than done. With a case length of 51 millimeters in the 7.62mm round versus the shorter 45-millimeter case length of the 5.56mm cartridge, developing a single

receiver that can accept both introduces some significant engineering issues. While numerous approaches (ranging from dedicated uppers and lowers for each round to modular receivers that can be modified to each cartridge) have been attempted, none in my opinion have offered an ideal balance of simplicity and usability. That is, until the Colt 901 series.

To be frank, Colt is not the first name to pop into many shooters' minds when the topic of innovation comes up. The company is renowned for making iconic, high-quality weapons that have proven themselves for decades—and, in some cases, more than a century—but these traditional offerings (the M1911, AR-15, Single Action Army, etc.) have given the company an air of conservatism to some. Clearly, this presumption is unfair if the 901 series is any indication of what Colt is capable of developing.

Measuring Innovation

The 901 series was born from the Colt Modular Carbine program. It was developed to not only address the USSOCOM Special Operations Forces Combat Assault Rifle (SCAR) requirements but also, according to Colt, exceed them. The SCAR solicitation called for a single serial-numbered weapon capable of multi-caliber operation. Colt's approach to solving the complicated issue of developing one weapon capable of firing both 7.62mm and 5.56mm rounds is one of those "Why didn't I think of that?" solutions.

The heart of the 901 family is the lower receiver, which is one area that causes significant issues when attempting to combine 7.62mm and 5.56mm capabilities. The most notable visual cue to the unique nature of the 901 lower is the forward section of the magazine well. This section of the well features an angled face

COLT'S 5.56MM CONVERSION SYSTEM

■ By Michael O. Humphries

So, you have a M.A.R.C. 901 rifle, 7.62mm PMAGs and a boatload of 7.62mm ammunition. But what about adapting it to 5.56mm? To achieve this, you simply have to purchase two things from Colt: the LE901-16S Conversion Kit and a mil-spec Colt 5.56mm NATO upper receiver assembly.

The Colt LE901-16S Conversion Kit, which costs \$200, comes in a blister pack and includes the

innovative Magwell Adapter Block, a replacement buffer and a new action spring for the 5.56mm round, and an instruction manual. To try this out, I acquired one of the kits along with a complete Colt LE6940 upper receiver assembly. This monolithic upper features a free-floated, 16.1-inch, chrome-lined barrel and folding sights.

Installation of the adapter block (which attaches to the upper receiver) only took seconds, and swapping out the buffer and action spring on a sample 901 I had on hand didn't take much longer. Once this was done, I had the upper assembly installed on the rifle's lower in less than a minute—all without needing tools.

The result was a compact 5.56mm carbine with familiar controls and excellent handling on a platform that could be changed back to 7.62mm in less than a minute.

The AR901-16S features all the modular adaptability of its 901 brethren, all at a lower price point. It features a free-floating handguard and non-ambidextrous controls.

roughly shaped like half of a hexagon. This feature is what allows the 901 to accept both 5.56mm- and 7.62mm-length upper receivers. Simply put, the shorter top portion of the magazine well corresponds to the length of a 5.56mm upper receiver assembly, while the point that extends outward from the forward center of the magazine well roughly corresponds to the length of a 7.62mm receiver.

The 7.62mm upper receiver of a 901 features an angled, overhanging portion that mates up with the angled face of the lower receiver. While the rear pinhole

of the lower receiver is located in the familiar location above the pistol grip, the forward pin is located in the forward central portion of the magazine well's angled face. When installed, the lines of the 7.62mm upper seamlessly flow into those of the lower, making for an attractive rifle.

To install a mil-spec Colt 5.56mm AR upper assembly onto this lower, you must use a Colt "LE901-16S Conversion Kit." The heart of this kit, which also includes a replacement 5.56mm buffer and action spring, is the Magwell Adapter Block, an ingeniously simple approach to the engineering conundrum of putting a 5.56mm into a 7.62mm lower. This aluminum adapter connects directly to your 5.56mm AR upper through an integrated pin that mates up with the upper receiver's forward receiver pin mount.

To properly house and orient a shorter 5.56mm magazine, the adapter has a solid forward portion roughly 0.5 inches deep. An open channel on its left side allows clearance for the 901 lower's magazine catch. To allow the 5.56mm upper to mate up with the 901 lower, the adapter also has a mid-mounted forward receiver pin interface that corresponds directly with that of the 901 lower receiver. Once you have installed the adapter block on the 5.56mm upper, swapped out the buffer and action spring in your 7.62mm lower and installed the upper, you are ready to go. This can be done in less than a minute and requires no tools.

M.A.R.C. The Spot

While the founding father of the 901 family is the LE901-16S, the line has recently been expanded and adapted to include new models and options. Dubbed the M.A.R.C. 901 line (for "Modular AR Carbine"), this series includes not only the LE901-16S but also new variants such as the LE901-16SE (available in both black and Flat Dark Earth), the LE901-18SE (which sports a longer 18-inch barrel over the standard 16-inch barrel length of the other rifles) and the AR901-16S (a simplified version of the 901 series with more basic features and a lower price point).

What all versions of the design share is the multi-caliber capability of switching from their native 7.62mm chambering to 5.56mm as well as familiar AR controls and operation, simplifying training and a transition from standard 5.56mm AR carbines or rifles. All versions feature fully free-floated,

Steve Woods Photo

SPECIFICATIONS

COLT AR901-16S

CALIBER:	7.62mm NATO
BARREL:	16.1 inches
OA LENGTH:	34.24-37.5 inches
WEIGHT:	8.4 pounds (empty)
STOCK:	B5 Systems SOPMOD Bravo
SIGHTS:	None
ACTION:	Direct-impingement semi-auto
FINISH:	Matte black
CAPACITY:	20+1
MSRP:	\$1,623

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Australian Outback 168 HPBT	2,603	1.60
Black Hills 175 BTHP	2,577	1.40
Federal 150 Fusion	2,684	1.55

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.

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COLT M.A.R.C. 901 SERIES

chrome-lined barrels with four-groove, 1-in-12-inch-twist rifling and topped off with threaded muzzles. In addition, all feature the familiar direct-impingement system of operation shared with the original M16 rifle. Also, with the exception of the AR901-16S, the M.A.R.C. carbines feature monolithic one-piece upper assemblies. The AR901-16S features an A2-style muzzle brake, while the others sport open-tined Vortex flash suppressors.

Where the newer additions to the 901 family differ from the original LE901-16S is primarily in their features, weight and price points. Whereas the LE901-16S possesses a quad-rail forend with integrated sling swivel attachment points, the 16SE and 18SE versions feature user-configurable forends with Picatinny top rails and smooth sides and bottoms with attachment points for included rail sections. The AR901-16S comes with a tubular handguard with user-configurable rail segments. The 16SE and 18SE variants retain the integral sling swivel attachment points of the original LE901-16S. The weight of the LE901-16S is 9.4 pounds, but all of the new variants come in at roughly a pound less. Also, the prices

The LE901-16SE comes with a 16.1-inch barrel capped with a Vortex flash suppressor. Colt also ships the carbine with folding front and rear backup sights that pair well with the long Picatinny top rail, which provides plenty of space for mounting optics.

The LE901-16SE carbine features a monolithic upper receiver with a free-floating forend that is designed to accept included Picatinny rail segments. The lower features ambidextrous mag and bolt releases.



The difference in the lengths of the 5.56mm (top) and 7.62mm (bottom) is the biggest hurdle in building one platform that fires both.

are lower on the new variants, with the basic LE901-16SE priced at \$2,181 and the AR901-16S at \$1,623.

The flattop upper receiver assembly of all the M.A.R.C. variants will be very familiar to anyone who has used an AR carbine or rifle. All of the standard features are there: forward assist, shell deflector, steel dust cover, etc. The lower receiver of the M.A.R.C. family should also be familiar to any AR user, with its standard safety selector and magazine release. The lower of the 901 family also deserves note for the fact that it is designed from the ground up to be capable of being fully ambidextrous (apart from an inexplicable lack of an ambidextrous safety being

included). On all versions save the AR901-16S, the magazine release and bolt carrier release are fully ambidextrous.

The offside bolt carrier release is located above the standard magazine release button, and the offside magazine release is located directly below the standard bolt carrier release.

While the AR901-16S comes without standard iron sights, all other 901 variants available feature folding backup iron sights. The rear unit is a Colt-marked, windage-adjustable sight that features heavy protective wings and a dual peep aperture. The elevation-adjustable front sights are integral to the gas block (which also features a bayonet lug) and sport protective wings. Also of note regarding the lower is the fact that it is dimensioned to accept standard AR-pattern accessories such as pistol grips and buttstocks. All 901 variants come standard with A2-style pistol grips, and all (once again, save the AR901-16S) feature Vltor IMod collapsible stocks. These



SPECIFICATIONS

COLT LE901-16SE

CALIBER:	7.62mm NATO
BARREL:	16.1 inches
OA LENGTH:	34.24-37.5 inches
WEIGHT:	8.4 pounds (empty)
STOCK:	Vltor IMod
SIGHTS:	Folding front and rear
ACTION:	Direct-impingement semi-auto
FINISH:	Matte black
CAPACITY:	20+1
MSRP:	\$2,181

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Australian Outback 168 HPBT	2,612	1.50
Black Hills 175 BTHP	2,583	1.35
Federal 150 Fusion	2,673	1.15

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.



feature rubber buttpads and strike plates as well as dual battery compartments that also act as enhanced cheekrests. The AR901-16S comes with a collapsible B5 Systems SOPMOD Bravo stock.

Range Time

I had the opportunity to try out two of the new M.A.R.C. carbines from Colt for myself: the LE901-16SE and the AR901-16S. Both carbines came packed in Colt cardboard boxes with a sealed package of accessories, including a single Magpul 20-round magazine. Upon inspection, I determined that both carbines had good fits and finishes, and their moving parts operated smoothly.

After getting the rifles home and giving them a more thorough inspection, I equipped them with optics (a Vortex Optics StrikeFire II red dot paired with a VMX-3T magnifier unit on the AR901-16S and a Leupold 3.5-10x40mm Mark 4 LR/T scope on the LE901-16SE) and headed out to the range to put them through their paces. Early on I had a few hiccups with the LE901-16SE not fully cycling after a round was fired, but some lubrication and a little more break-in time solved the issue. I ran both the AR901-16S and the LE901-16SE for function at some close-range targets, and then settled in with them for 100-yard accuracy testing on the bench. I had picked up that both rifles were accurate from my closer-in testing, and they bore this fact out at 100 yards, too. Their overall accuracy hovered around the 1.5-inch mark, with a smallest group of 1.15 inches with the LE901-16SE and Federal Fusion ammunition.

Having tested an original LE901-16S, I must say that I like the new smooth-sided forend of the 16SE variant. It was slim and comfortable in hand, and it was nice to have the option of installing the short rail sections as desired. Both carbines were a pleasure to shoot. They handled well, and the recoil was very manageable. As a southpaw, I really appreciated the ambidextrous controls (apart from the lack of an ambidextrous safety) of the Colt LE901-16SE.

While the debate over the relative merits of the 7.62mm NATO versus the 5.56mm NATO will undoubtedly go on unabated, the M.A.R.C. 901 series from Colt gives enthusiasts from both schools of thought an appealing option. Recognizing that having access to both the 7.62mm and 5.56mm gives you greater operational flexibility, why not acquire a weapon system that can employ both? With the M.A.R.C. 901, I believe Colt has developed one of the best answers to the question of how you can accomplish this feat. For more information, visit colt.com or call 800-962-2658. **SW**

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WEAPONS INSIDER

CARL GUSTAF M4 LAUNCHER

This next-gen rocket launcher delivers battlefield-dominating force!

BY SCOTT R. GOURLEY

Built for 21st century warfare, Saab's new Carl Gustaf M4 rocket launcher is lighter and shorter than previous models.



Its official names vary from the tongue-twisting "M3 Multi-role Anti-armor Anti-tank Weapon System" to the internationally favored "84mm Carl Gustaf Recoilless Rifle." But to many American warfighters, it's simply called the "Charlie G."

Regardless of the moniker used, the weapon system recently achieved a major milestone when Swedish manufacturer Saab Dynamics unveiled a new version of the Carl Gustaf as the M4 that appears to perfectly match emerging United States military weapon requirements.

Launcher Origins

The lineage of the Carl Gustaf weapon system begins nearly 70 years ago with the introduction of the original "M1" version into the Swedish Army in 1948. That initial domestic design was followed by the 1964

introduction of the first export version of the Carl Gustaf. Designated the "M2," the launcher had a weight of approximately 31.3 pounds and an overall length of 44.4 inches.

The M3 variant was introduced in 1986. While significantly lighter (22 pounds) and slightly shorter (42 inches) than its predecessor, the M3 model possesses ammunition compatibility with earlier and future versions, a feature that continues throughout the Carl Gustaf system today, increasing its versatility.

The M3 was the first version fielded by U.S. Special Operations Command (USSOCOM) elements—including U.S. Army Rangers in 1989 and Navy SEALs in 1997—as a replacement for the aging M67 series of 90mm recoilless rifle or as a battlefield substitute for the Javelin anti-tank missile. Designated by the U.S. as the
(continued on page 128)



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BATTLE-READY BULLPUPS

A roundup of some of the top covert weapons available to operators today!

The FS2000 CQB from FN America offers fight-stopping 5.56mm firepower in an ultra-compact package.

By Robert A. Sadowski

When it comes to maximizing performance and minimizing bulk in a tactical firearm, it is hard to beat the bullpup. A “bullpup” weapon, by definition, has a design where the action is located behind the trigger group. The action is built into the buttstock, thus significantly reducing the overall length of the weapon while maintaining the same full-length barrel of a conventional rifle or shotgun. This shorter length gives the bullpup better maneuverability in confined environments—creeping around corners, moving through doorways and rooms, getting in and out of vehicles. The balance of the bullpup is also moved toward the rear, making it more comfortable to carry and quick to shoulder. The operating controls of bullpups are closer to the user, too. In short, they combine the best of both worlds—outsized power and downsized dimensions. From across a room or out to thousands of yards, bullpups offer uncompromised firepower in compact packages.

“From across a room or out to thousands of yards, bullpups offer uncompromised firepower in compact packages.”

Sean Utley Photo



Barrett Model 95

The Barrett Model 95 harnesses the pinpoint accuracy of a bolt-action rifle with the power of the .50 BMG round. The bolt carrier assembly is a simple, rugged design that can be field-stripped in less than 60 seconds. For more information, visit barrett.net or call 615-896-2938.

SPECIFICATIONS

CALIBER:	.50 BMG
BARREL:	29 inches
OA LENGTH:	45 inches
WEIGHT:	23.5 pounds (empty)
STOCK:	Steel
SIGHTS:	None
ACTION:	Bolt
FINISH:	Matte black or grey
CAPACITY:	5+1
MSRP:	\$6,500

Bluegrass Armory Moonshiner

The Moonshiner from Bluegrass Armory is a bolt-action bullpup that features an interchangeable-caliber platform, allowing a user to go from 7.62mm NATO to .300 Win Mag and .338 Lapua. The receiver is made from billet aluminum. For more information, visit bluegrassarmory.com or call 352-401-9070.



SPECIFICATIONS

CALIBER:	7.62mm NATO, .300 WM, .338 Lapua Magnum
BARREL:	21 inches
OA LENGTH:	36 inches
WEIGHT:	11 pounds (empty)
STOCK:	Aluminum
SIGHTS:	None
ACTION:	Bolt
FINISH:	Desert tan, OD green, black
CAPACITY:	3+1
MSRP:	\$2,995



Desert Tech SRS-A1

The Stealth Recon Scout A1 (SRS-A1) sniper system from Desert Tech is 12 inches shorter than a conventional sniper system. The rifle can also use quick-caliber conversion kits, so operators can change the SRS-A1's chambering in the field, and it's guaranteed to shoot within 0.5 MOA with quality match ammo. For more information, visit deserttech.com or call 801-975-7272.

SPECIFICATIONS

CALIBER:	7.62mm, .260 Remington, 6.5 Creedmoor, 6.5x47 Lapua, 7mm WSM, .300 Win Mag, .338 Lapua Magnum
BARREL:	22-26 inches
OA LENGTH:	32.5-39.7 inches
WEIGHT:	10.5-11 pounds (empty)
STOCK:	Synthetic
SIGHTS:	None
ACTION:	Bolt
FINISH:	Black, Flat Dark Earth
CAPACITY:	10+1, 6+1, 5+1
MSRP:	\$4,995-\$5,545



FN FS2000 CQB

The FS2000 CQB from FN America uses a gas-operated rotating bolt, and spent casings are ejected from the front of the carbine, through a port near the exposed barrel. The barrel is slightly over 17 inches in length and is fitted with a ported muzzle brake. (fnusa.com; 703-288-3500)

SPECIFICATIONS

CALIBER:	5.56mm NATO
BARREL:	17.44 inches
OA LENGTH:	29.25 inches
WEIGHT:	7.86 pounds (empty)
STOCK:	Synthetic
SIGHTS:	Folding front and rear
ACTION:	Semi-auto
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$2,779

FN P90

The P90 is completely ambidextrous and built for the 5.7x28mm cartridge. It uses a blowback operating system and fires from a closed bolt. In its LE/military configuration, the P90 features select-fire capabilities, an ultra-short overall length and a 50+1 capacity. The civilian PS90 features a 16.1-inch barrel and semi-auto operation. For more, visit fnhusa.com or call 703-288-3500.



SPECIFICATIONS

CALIBER:	5.7x28mm
BARREL:	10.39 inches (PS90: 16.1)
OA LENGTH:	19.88 inches (PS90: 26.23)
WEIGHT:	5.8-6.24 pounds (empty)
STOCK:	Synthetic
SIGHTS:	None
ACTION:	Semi-auto
FINISH:	Matte black
CAPACITY:	50+1 (PS90: 10+1, 30+1)
MSRP:	N/A (PS90: \$1,449)

IWI Tavor SAR

In service with the Israel Defense Forces (IDF) since 2001, the Tavor is now being offered in a semi-automatic version by IWI US to American citizens. SARs are available with 16.5- or 18-inch barrels, and shooters can choose a model with a flattop or the IDF variant, which comes with a Mepro 21 day/night reflex sight mounted. For more, visit iwi.us or call 717-695-2081.



SPECIFICATIONS

CALIBER:	5.56mm NATO
BARREL:	16.5 or 18 inches
OA LENGTH:	26.13 inches
WEIGHT:	7.9 pounds (empty)
STOCK:	Synthetic
SIGHTS:	Flip-up front and rear
ACTION:	Black, FDE or OD green
CAPACITY:	30+1
MSRP:	\$1,999

Kel-Tec KSG

The unique KSG is a pump-action shotgun with two magazine tubes. Each tube holds six rounds for a total capacity of 12+1 rounds. The user selects the magazine tube via a lever located behind the triggerguard. For more information, visit keltecweapons.com or call 800-515-9983.



SPECIFICATIONS

GAUGE:	12; 3-inch chamber
BARREL:	18.5 inches
OA LENGTH:	26.1 inches
WEIGHT:	6.9 pounds (empty)
STOCK:	Synthetic
SIGHTS:	None
ACTION:	Pump
FINISH:	Matte black
CAPACITY:	12+1
MSRP:	\$990

Kel-Tec RFB

Kel-Tec's RFB (Rifle, Forward-ejecting Bullpup) uses a short-stroke gas piston operating system. All of its controls are fully ambidextrous, and it uses common FAL-pattern magazines. The muzzle is threaded to accept flash or sound suppressors. For more information, visit keltecweapons.com or call 321-631-0068.



SPECIFICATIONS

CALIBER:	7.62mm NATO
BARREL:	18.5 inches
OA LENGTH:	26 inches
WEIGHT:	8.1 pounds (empty)
STOCK:	Synthetic
SIGHTS:	None
ACTION:	Semi-auto
FINISH:	Matte black
CAPACITY:	10+1, 20+1
MSRP:	\$1,880

A police officer wearing sunglasses and a tactical vest is aiming a rifle from the driver's side of a vehicle. The background is a blurred outdoor scene with trees.

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MSAR STG-E4

The STG-E4 is the fifth generation of MSAR's American-made bullpup. At its heart is a forged 7075-T6 aluminum receiver. It is compatible with most AR-15/M16 magazines. For more information, visit msarinc.com or call 814-363-9260.

SPECIFICATIONS

CALIBER:	5.56mm NATO, 300 BLK
BARREL:	16.5 inches
OA LENGTH:	26.5 inches
WEIGHT:	7.2 pounds (empty)
STOCK:	Synthetic
SIGHTS:	None
ACTION:	Semi-auto
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$1,999



Standard Manufacturing DP-12

The DP-12 combines pump-action and double-barreled shotguns into one. The twin-barreled bullpup holds sixteen 2¾-inch shells that are fired via a single trigger one barrel at a time—the right barrel and then the left. For more information, visit stdgun.com.

SPECIFICATIONS

GAUGE:	12; 3-inch chamber
BARREL:	18.5 inches
OA LENGTH:	29 inches
WEIGHT:	9 pounds (empty)
STOCK:	Synthetic
SIGHTS:	None
ACTION:	Pump
FINISH:	Matte black
CAPACITY:	16
MSRP:	\$1,395



Steyr AUG A3 M1 The iconic Austrian AUG (*Armee Universal Gewehr*) utilizes a modular design that allows users to quickly change barrels for specific scenarios. The new M1 variant is configured with an optics attachment platform similar to the AUG A2 and is offered in short-rail, high-rail and integrated-optic versions (the latter with either a 1.5X or 3X scope). For more information, visit steyrarms.com or call 205-417-8644.

SPECIFICATIONS

CALIBER:	5.56mm NATO
BARREL:	16 inches
OA LENGTH:	28.25 inches
WEIGHT:	8 pounds (empty)
STOCK:	Synthetic
SIGHTS:	None or 1.5X/3X scope
ACTION:	Semi-auto
FINISH:	Matte black, OD green
CAPACITY:	30+1, 42+1
MSRP:	\$2,099-\$2,599



UTAS UTS-15

The UTS-15 uses an AR-style pistol grip and safety selector, but its resemblance to an AR ends there. Above the barrel are two magazine tubes that can accommodate seven 2¾-inch shells or six 3-inch shells each. The Picatinny top rail makes it easy to mount sights. For more information, visit utas-usa.com or call 847-768-1011. **SW**

SPECIFICATIONS

GAUGE:	12; 3-inch chamber
BARREL:	18.5 inches
OA LENGTH:	29.5 inches
WEIGHT:	6.9 pounds (empty)
STOCK:	Synthetic
SIGHTS:	None
ACTION:	Pump
FINISH:	Black, desert, marine, OD green, Muddy Girl, zombie green
CAPACITY:	14+1
MSRP:	\$1,100

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The PMAG 17 GL9 is a 17-round magazine featuring durable polymer construction, paint pen dot-matrix for labeling, tool-less floor plate removal for ease of maintenance, a visible full capacity indicator window, and Magpul reliability. Compatible with all full-size 9mm Glock handguns, as well as compact and sub-compact variants with some protrusion below the grip.

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The M9A3 is designed for the modern warrior who requires a handgun that can be adapted for different missions and harsh environments.

BERETTA M9A3 9mm



The M9A3 is an enhanced version of the U.S. Army's M9, with an ultra-durable Cerakote finish, replaceable sights, a new frame and many more upgrades.

The M9's legacy lives on in this 21st century
COMBAT PISTOL!

BY ROBERT A. SADOWSKI



"In all, the M9A3 performed flawlessly, and it improves upon the ergonomics of the M9..."

Better ergonomics, better performance, a better Beretta. The new Beretta M9A3 is everything an operator would expect in a Beretta M9 series pistol—and much more. After 30 years of U.S. military use, starting in conflicts like the invasion of Panama to the recent war in Afghanistan, the M9 has proven its worth as well as shown its age. It is, after all, a 30-year-old design. The new M9A3 is the next generation of M9 fighting pistol proposed by Beretta Defense Technologies (BDT) to the U.S. Army to equip America's warriors well into the 21st century.

"BDT is a strategic alliance of companies consisting of four brands owned by Beretta Holding: Beretta, Bennelli, Sako and Steiner," explained Gabriele De Plano, the vice president of BDT USA's marketing and operations. "All of these companies have a rich military heritage and, when combined, offer small arms systems for military customers."

I recently had the opportunity to shoot the M9A3 and hear the story of the M9's evolution firsthand

from de Plano on a cold February day in Accokeek, Maryland, at Beretta USA's headquarters.

M9 Origins

When I speak to veterans about the M9, I can hear it in their stories, see it in their eyes. The M9 is more than a piece of equipment. In some cases, the Beretta saved their lives. That bond was not always there. The change did not come easily; the M9 earned it one round at a time.

The transition from the venerable M1911A1 to the M9 was wrenching for some in the U.S. military, but by 1979 the situation could not be ignored any longer. The M1911A1s in service were worn out. The Joint Service Small Arms Program began searching for a replacement pistol to use the 9mm round that was chosen to comply with the NATO Standardization Agreement (STANAG). The .45 ACP was out. The 9mm was in. That switch was difficult enough for some in the U.S. military to accept, making it easy to see why any pistol chosen—American or foreign made—was going to be

Photos courtesy Beretta



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BERETTA M9A3



Beretta equips the M9A3 with a threaded barrel (left) so operators can easily install sound suppressors for covert operations. During testing, the M9A3 ran flawlessly with and without a suppressor installed, and the author (right) enjoyed its enhanced ergonomics.

controversial. The new chambering and Beretta pistol were not without their critics. At the time, the M1911A1 had nearly 75 years of service under its belt. The Beretta pistol had to prove its worth for some even before it was accepted by the military. And it did.

"Beretta won two consecutive pistol trials before winning the M9 contract," explained de Plano, offering insight into the M9's history. Prior to the M9 contract, Beretta won the JSSAP competition by the Air Force. The test results were contested, and the Beretta was retested in the XM9 trials. Beretta won again, and yet again the results were controversial, so the Beretta was submitted to the XM10 trials. The Beretta excelled in all the trials the military could throw at it while competing against other well-known pistol designs from other established companies. After the dust settled, mostly silencing critics, the M9 began delivery. "About 600,000 pistols have been delivered to the Department of Defense [DoD]," said de Plano. "We estimate that about 425,000 went to the Army and the rest to other services and foreign military sales." The DoD either gives or sells M9s to other countries. Many foreign military sales have gone to Iraq and Afghanistan.

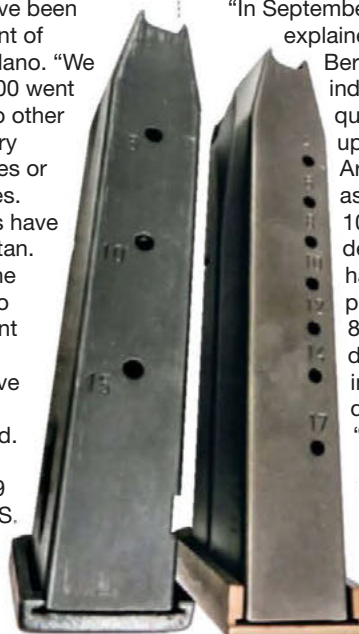
The first few years of the contract allowed Beretta to supply the U.S. government with pistols made in Italy. "Since 1987, all pistols have been made in Accokeek, Maryland," de Plano added. Beretta USA may have an Italian heritage, but the M9 design is owned by the U.S. military and is built by an American workforce. A fact that Beretta takes pride in.

Since the U.S. government owns the M9 design, the DoD is free to make design changes and purchase spare parts from other vendors. Some decisions by the DoD have inadvertently given Beretta grief. For example, the DoD purchased magazines with a phosphate finish from an outside vendor that performed poorly in sandy environments. Beretta got a black eye for it, even though the magazines were not Beretta-made nor Beretta's design. Beretta magazines, on the other hand, offer a grit-resistant finish in a design that allows grit and sand to flow through the magazine and not clump up and impede cartridge feeding.

"Other myths persist," said de Plano, "like the M9 having a service life of 5,000 rounds." The original specifications 30 years ago called for a service life of 5,000, which was a tremendous step up from the M1911A1. The actual service life of the M9 is about 25,000 rounds.

"In September 2012," de Plano explained, "the Army awarded

Beretta USA a five-year indefinite delivery/indefinite quantity [ID/IQ] contract for up to 100,000 pistols." The Army can order as few or as many as it needs, up to 100,000. Of the 100,000, de Plano says, the Army has ordered 20,000 pistols, which means 80,000 pistols can still be delivered. "Of the remaining orders," reasons de Plano and Beretta, "why not improve on the



The M9A3's magazine (right) holds two more rounds than the M9's (left), bringing its total capacity to 17+1.



The M9A3's Vertec frame has a straight backstrap (left). Beretta will also offer a wraparound grip that mimics the M9's curved grip (right).

existing design and deliver the M9A3?" Also around this same time, the Army announced the Modular Handgun System (MHS) program to potentially replace the M9 and the compact M11 pistol. New programs implemented by the Army and other branches of the service are a relatively common occurrence; some lead to change while others fizzle out due to lack of funding. "Because the MHS is also an open-caliber solicitation," de Plano explained, "the 9mm chambering may also be replaced."

The M9A3 is not an entry for the Army's MHS solicitation; it would only meet about 84 percent of the draft RFP's requirements. Beretta plans to enter its new striker-fired APX into the MHS solicitation (see the sidebar on page 24 to find out more). In the meantime, the Army could be taking a dual-prong strategy: improving the M9 while finding a new pistol. In reality, a new pistol replacement would take years to implement with design, manufacturing, logistics support, training, ammo procurement and more, slowing the process.

BDT submitted the M9A3 to the Army as an Engineering Change Proposal (ECP) to the M9. All DoD contractors

SPECIFICATIONS:

BERETTA M9A3

Caliber:	9mm
Barrel:	5.1 inches
OA Length:	8.7 inches
Weight:	33.3 ounces (empty)
Grips:	Polymer
Sights:	Three-dot tritium
Action:	DA/SA
Finish:	Flat Dark Earth Cerakote
Capacity:	17+1
MSRP:	N/A

are encouraged to submit engineering proposals. The DoD also solicits input from the industry on improvements. For instance, the Army recently requested improvements and/or replacement ideas from the industry for its SASS semi-automatic sniper rifle system. The ECP process is part of the Army's tradition of incremental small arms development.

Gun Details

BDT took the initiative and looked at what could be done to make the M9 better. "We began collecting data from a variety of sources," said de Plano. A wish list of sorts was compiled that addressed

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issues ranging from the M9's modularity and durability to its grip size and ergonomics. The new Beretta M9A3 addresses nearly all of the concerns, and the ECP was presented to the U.S. Army Contracting Command on December 10, 2014.

The M9A3 pistol had a familiar feel yet fit my average-sized hands better due to its Vertec frame, with a straight backstrap and thin grip panels. The Vertec model was offered commercially from 2002 to 2005. The girth of the M9 grip is a concern for some operators, as it is with many double-stack 9mm pistols. The Vertec frame addresses the girth issue, making the pistol feel thinner. For those with larger hands, the M9A3 will come with a wraparound grip backstrap that makes its grip size similar to the M9's.

"The new M9A3 is the next generation of M9 fighting pistol...to equip America's warriors well into the 21st century."

Another "complaint" about the M9 was its magazine capacity. The M9A3 increased the capacity from 15+1 to 17+1. The barrel is also threaded for use with a suppressor, and Beretta ships the gun with a thread protector. The front sight is now removable, so a higher front sight can be installed when the M9A3 is used with a suppressor, or if the user wants to install night sights, for example. An accessory rail was added, similar to the USMC's M9A1 variant, so that the M9A3 can be outfitted with a laser or

light. The magazine release button has been enlarged and the magazine well has been beveled, making it easier for an operator with small hands to dump a magazine and reload quickly.

The safety lever of the M9A3 can be swapped with a decocker at the armorer level. The internal components have also been updated. Beretta has made 30 years' worth of improvements in its 92FS model, and those improvements are reflected in the M9A3, like its third-generation tilting locking block.

FIRST LOOK! BERETTA'S NEW APX



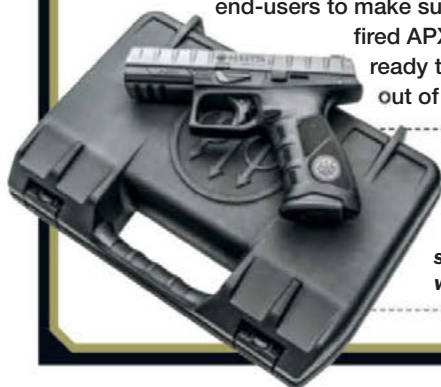
■ BY ROBERT A. SADOWSKI

The APX is Beretta's first full-sized, striker-fired pistol with a polymer frame, and it will most likely be submitted to the U.S.

Army's upcoming MHS trials. Beretta

USA met with more than 20 law enforcement agencies across the United States to get input and feedback on the APX, while Beretta in Italy tested the pistol with European operators. The APX has spent three years in development, enduring rigorous testing. Beretta addressed lots of feedback from law enforcement and other

end-users to make sure the striker-fired APX would be ready to perform right out of the box.



A big departure from past Beretta designs, the new APX is the company's first full-sized, striker-fired pistol with a polymer frame.

When I spoke with Gabriele De Plano, the vice president of BDT USA's marketing and operations, briefly about the APX, he provided a general idea about the pistol but caveated his statements by saying that the "final U.S. variant of the APX is still being developed." Here's what we do know about the APX from its debut at the International Defense Exhibition (IDEX) conference in Abu Dhabi in February.

APX SPEX: The APX uses an ergonomic, modular, polymer frame similar in concept to that used in the ultra-compact Beretta Pico pistol. Advanced ergonomics are built into the design, with differently sized grip frames available so the APX will fit different hand sizes. The striker-fired trigger group is the serialized part of the APX. The finalized pistol available in the U.S., which will have slightly different specifications than the model recently unveiled in the Middle East, will most likely feature three-dot night sights that are dovetailed into the steel slide. The Beretta APX is also designed so that operators can switch between chamberings—from 9mm to .40 S&W and possibly .45 ACP—with ease.



The battle-tested M9 has proven its worth in combat ever since it was first fielded by the U.S. Army in the 1980s.

Range Time

To reacquaint myself with the M9 platform and create a benchmark, I first fired the M9. The familiarity came back to me: the DA/SA trigger, the safety lever, the girth of the grip. For testing the M9A3 we used Hornady's 135-grain Critical Duty ammo, which has a factory-specified velocity of 1,010 fps. With this commercial ammo, I had no issue shooting the black out of the target at 7 yards. The 4-inch bullseye was gone after about 100 rounds, aside from a few errant shots in DA mode. To test the pistol's balance and performance, I installed an AAC Ti-RANT 9mm suppressor, and it ran exceptionally well.

In all, the M9A3 performed flawlessly, and it improves upon the ergonomics of the M9 while saving money for the DoD—no new training, complete compatibility with existing equipment systems like holsters and magazine pouches, and potentially at a cost less than the current M9. "Major components from the M9A3 are 100-percent compatible with the M9; 76 percent of the M9A3's individual parts are interchangeable with the M9," de Plano said.

Final Notes

The M9A3 has several performance enhancements that'll benefit the end-user—our warriors—and is potentially a better value for the DoD and us taxpayers if adopted. A commercial version of the M9A3 will be available later in 2015. As much as Beretta is associated with pistols for tactical, personal defense and competition uses, the firearm manufacturer also offers tools and parts specific to the 92FS/M9 series of pistols like skeletonized hammers, oversized magazine release buttons, .22 LR conversion kits, magazines and Novak rear sights, to name just a few. Clothing and cases designed for concealed carry as well as tactical knives and lights are also part of what Beretta offers commercial and military markets. For more information, visit beretta.com. **SW**

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GUN TEST

Wilson Combat's first 7.62mm NATO rifle, the custom-grade BILlet-AR is a tank-tough design that expertly combines power and sub-MOA precision. Shown with a 4-12x40mm Leupold VX-R scope and a SureFire Scout light.





Harnessing

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BY DAVID BAHDE

PHOTOS BY STEVE WOODS

The need for rifles with greater range and more power than the 5.56mm, both within and outside the tactical communities, has always existed. While those in politics or the media have a perception that LEOs do not need that much power, they are ignoring reality, which can be risky and lethal. What works best should be determined by your area of operation, your typical engagement distances and the types of threats you're likely to encounter. Each LE agency is different. Rural agencies encounter well-armed threats with driveways longer than some city blocks. What works across the room in the big city may not get the job done from across the field in rural America. Take a drive across this great country and you'll notice vast open areas with minimal cover and concealment options. If I had to pick a patrol rifle for these remote areas, it wouldn't be a 5.56mm with a red-dot sight—it would be bigger and have an optic. For this role there are tons of choices now, but not many are as viable as the venerable .308 Winchester/7.62mm NATO.

WILSON COMBAT BILLET-AR 7.62MM



Built using a single billet of 7075-T6 aluminum, the CNC-machined receivers are well designed, lightweight and strong. Note the smooth lines, the contouring around the magazine well and the enlarged, integral trigger guard.



The author's test BILlet-AR rifle featured a fluted, 18-inch, match-grade barrel with a 1-in-10-inch twist rate and one of Wilson's Accu-Tac flash suppressors.

Seeing the AR platform's evolution over the last 20 years has been interesting. It has truly come a long way, especially in its most prolific chambering, the 5.56mm. Once almost obscure, the AR-15's only rivals these days when it comes to variety may be cell phones. Everything from pistols to precision rifles exists in every conceivable length, configuration and color. Most are more reliable and accurate than ever, with some astoundingly so. Prices range from \$500 to \$5,000, meeting most any need.

Until recently, however, that was not the case with .308/7.62mm ARs. The choices were slim, reliability potentially spotty and accuracy that could be marginal. But manufactur-

ers have come a long way, and these ARs are now better built, more accurate and infinitely more reliable. Entry-level rifles cost around \$1,500 while the prices for custom rifles reach into the stratosphere. What today's operators needed was something in the middle, and that sector is growing quickly, with solid rifles in the \$2,500 to \$3,000 range becoming increasingly popular. Wilson Combat's new, custom-grade 7.62mm ARs are at the top of this category.

Wilson Combat

Bill Wilson, the founder of Wilson Combat, is one of my friends. I've hunted hogs with him, trained with him and shot with him several times. I've also tested most of Wilson Combat's rifles, and they all have a few recurring themes. Bill likes things simple, clean and reliable—exactly what most officers need.

Bill may yield to the market on occasion, but he makes no compromises when he does. His rifles, like all Wilson Combat products, are reflections of what he wants and deems critical. Ignoring trends, he builds what he believes in and shares it with us, quite successfully in fact. Wilson Combat's products are highly sought after, and they have been for years. Much of that demand comes from the company's no-compromise attitude and real-world testing.

Every Wilson Combat design is tested on his range, often for months prior to any commercial release. Torture-tested for accuracy, portability, comfort and reliability, his rifles are among the most dependable I've ever used. Wilson's rifles are also taken on hog hunts and

SPECIFICATIONS

WILSON COMBAT BILLET-AR

CALIBER:	7.62mm NATO
BARREL:	18 inches
OA LENGTH:	36.5-39.75 inches
WEIGHT:	8.2 pounds (empty)
STOCK:	Wilson/Rogers Super-Stoc
SIGHTS:	Flip-up front and rear
ACTION:	Direct impingement semi-auto
FINISH:	Armor-Tuff
CAPACITY:	20+1
MSRP:	\$2,995

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Barnes 168 TTSX	2,575	1.10
Black Hills 175 OTM	2,500	0.81
Federal 168 Gold Medal Match	2,540	0.50
Hornady 155 TAP A-MAX	2,650	0.54
Silver State Armory 175 OTM	2,510	0.68

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.



"It is just like every other Wilson Combat rifle I've tested—it's accurate, reliable, well balanced and a true joy to shoot."

through state-of-the-art training courses, so it's pretty safe to say that every rifle Wilson Combat introduces was used in the field prior to ever making it to the market. And with this one, I think Wilson Combat has brought a real winner to the market. Specifically, I am referring to the 18-inch-barreled Wilson Combat BILet-AR 7.62mm rifle I recently tested.

Gun Details

The rifle starts with Wilson Combat's BILet-AR upper and lower receivers, which are machined from a solid billet of 7075-T6 aluminum. Coated in a nice, matte black Armor-Tuff finish, they both have smooth angles and lines. Sharp edges are removed wherever possible and weight is kept to a minimum.

The upper receiver has no forward assist and mates perfectly to the lower receiver. Several barrel options are available, and my test rifle came with an 18-inch, fluted, 1-in-10-inch-twist, stainless steel barrel with a match chamber. The barrel is also capped with an Accu-Tac flash suppressor. Wilson's TRIM handguard surrounds the barrel, rifle-length gas tube and low-profile gas block. The premium bolt and bolt carrier group are NP3 plated for durability and ease of cleaning.

Wilson's Tactical Trigger Unit (TTU) is housed in a clean and smooth lower receiver. Everything is nicely rounded, especially around the triggerguard. Single-stage triggers come standard, but my test rifle came with a two-stage design. Breaking at 4 pounds with a predictable first stage, it should meet most policy requirements while providing for superb accuracy. Wilson also offers a TTU with a 5- to 5.75-pound pull for more stringent duty applications.

The lower also has an enlarged triggerguard that provides enough room for gloved hands. Bravo Company's BCM Gunfighter grip is installed for greater comfort and control. The six-position

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LEFT: The magazine well is flared for fast reloads, and the BCM Gunfighter grip offers extra control as well as a storage compartment.

RIGHT: The Rogers/Wilson Super-Stoc can be adjusted to six different length-of-pull positions and has several sling mounting points.



buffer tube sports a Wilson/Rogers Super-Stoc. Wilson Combat also supplied my test rifle with a set of flip-up sights for the long, continuous top rail.

For testing I used a Leupold 4-12x40mm VX-R scope with the company's FireDot reticle. The center section of the reticle includes a small circle with a dot in the middle. Pressing the illumination button on the left side of the scope lights up the dot. If you keep pressing it, you'll cycle through several intensity levels. Two lines sit at 2.1 and 4.8 MOA below the center for holds at longer ranges. The scope also has 0.25-MOA zeroing knobs that are covered for protection. I installed the scope in a Wilson Combat Accurizer scope mount, providing the proper eye relief with a solid return to zero.

Range Time

I expected excellent accuracy, and I was certainly not disappointed. For a real comparison, I tested the BILlet-AR 7.62mm alongside two custom precision bolt-action rifles, and the Wilson kept up with both of them. Wilson's rifles have always been accurate, and this one was as accurate as factory ammunition can shoot. Admittedly, this is becoming the norm with ARs in this price range, especially those designed as precision rifles. Either way, this test alone dispels any remaining myths as to the inaccuracy of the semi-automatic platform.

The rifle's best group, produced with Federal's 168-grain Gold Medal Match ammo, measured exactly 0.5 inches at 100 yards. Hornady's 155-grain TAP

A-MAX was also superbly accurate, along with most of the match ammunition. Even the Barnes 168-grain TTSX shot right at an inch. Next I tested the rifle for groups at 300 yards, and then shot steel targets between 100 to 400 yards. Holding under 1 MOA, the rifle produced a group measuring a tad over an inch at 300 yards on a crisp, wind-free morning.

The Leupold VX-R scope could serve in a patrol environment just fine. The center aiming section allows for easy quartering of the target and excellent precision. Turn on the dot and it is easy to get center hits at closer ranges. Even at 25 yards, 4X magnification provided a decent field of view, and 12X is more than enough power for most police environments. Testing the holds, they could be used pretty easily in

AAC 762-SD Suppressor

■ By Andy Massimilian

Advanced Armament Corporation (AAC) has reintroduced its 762-SD suppressor with an enhanced design that is made to withstand heavy use with cartridges up to 7.62mm NATO. This suppressor, which has a stated sound reduction of 30 decibels, uses Inconel 718 for the end cap and all the baffles while the original used Inconel 718 for only the blast baffle and stainless steel for the rest. Inconel is far more heat resistant than stainless and is an essential aspect of this suppressor's enhanced durability. The



design uses eight cone-type baffles that are fully circumferentially welded. The tube is made from 316L stainless steel with a Cerakote finish.

EASY ON/OFF: The 762-SD also has a 51-tooth (51T) ratchet mount instead of the 18-tooth mount used the original. The ratchet mount can attach to three of AAC's stainless steel muzzle brakes and compensators that can be threaded onto your rifle. The suppressor mount is designed to attach and detach quickly to the brake/compensator. The 51T design is an improvement over the 18-tooth variant because

SPECIFICATIONS:

AAC 762-SD

Caliber:	7.62mm NATO
OA Length:	9 inches
Weight:	23 ounces
Construction:	Stainless body, Inconel baffles and end cap
Sound Reduction:	30 decibels
MSRP:	\$650

it has a passive retention latch that automatically engages when installing the suppressor and prevents it from coming loose until you disengage the latch (the 18T model was held on by friction alone). For more information, visit advanced-armament.com or call 770-925-9988.

TOP 15 SUPPRESSOR-READY PISTOLS

Strike silently with these deep-cover CQB OPERATORS!

By Richard Johnson

SOUND SUPPRESSORS provide military and tactical operators a means for applying deadly force while remaining in a covert, low-profile mode. As a result, they can move in on a target and strike unseen and unheard. And, while there is a wide range of suppressors designed for shoulder-fired weapons, there is an obvious role for suppressors mounted on handguns for the ultimate in close-range, covert strikes.

Today, more than a dozen handgun manufacturers offer pistols that are suppressor-ready right out of the box. What constitutes suppressor-ready varies from company to company, but at the very least it means the barrels are threaded for the attachment of a sound suppressor. Some companies go the distance and offer the pistols with taller sights, accessory rails and special corrosion-resistant finishes to make true tactical guns. Here is a look at 15 different suppressor-ready pistols currently on the market today.

Suppressed pistols like the Walther PPQ M2 SD (shown) allow operators to get very close to their targets without giving away their position.

"There is an obvious role for suppressors mounted on handguns for the ultimate in close-range, covert strikes."

Photo Courtesy Walther



► Beretta M9A3

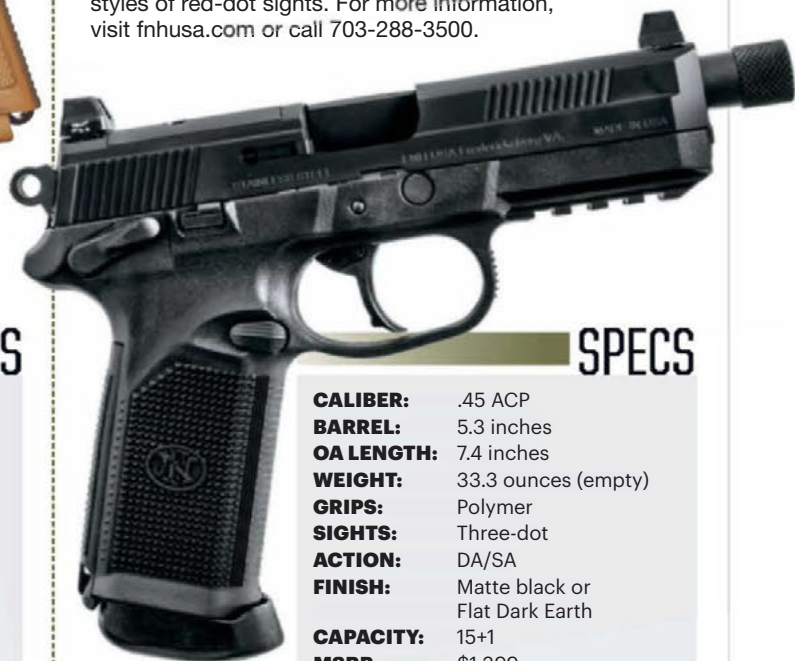
An evolution of the battle-proven M9 pistol, the M9A3 is a combat-ready handgun that is designed to meet the needs of virtually any soldier or SWAT cop. This pistol is equipped with a threaded barrel for a sound suppressor, night sights and an accessory rail. Beretta uses 17-round, sand-resistant magazines in the M9A3 and finishes the gun in a Flat Dark Earth Cerakote. For more information, visit beretta.com.

The M9A3 features an accessory rail, a tough Cerakote finish for desert operations and an ergonomic frame to fit a wide range of shooters. Learn more on page 20.

SPECS	
CALIBER:	9mm
BARREL:	5.1 inches
OA LENGTH:	8.7 inches
WEIGHT:	33.3 ounces (empty)
GRIPS:	Polymer
SIGHTS:	Three-dot tritium
ACTION:	DA/SA
FINISH:	Flat Dark Earth Cerakote
CAPACITY:	17+1
MSRP:	N/A

► FNX-45 Tactical

The FNX-45 Tactical is a perfect example of why FN America is relied on by so many military and law enforcement organizations. Chambered in the hard-hitting .45 ACP, this pistol was developed to withstand harsh combat conditions. In addition to being fitted with a threaded, 5.3-inch, cold-hammer-forged barrel, the pistol is equipped with both high-rise night sights and a slide that is cut for red-dot optics. Two mounting bases are included to accept multiple styles of red-dot sights. For more information, visit fnhusa.com or call 703-288-3500.



SPECS	
CALIBER:	.45 ACP
BARREL:	5.3 inches
OA LENGTH:	7.4 inches
WEIGHT:	33.3 ounces (empty)
GRIPS:	Polymer
SIGHTS:	Three-dot
ACTION:	DA/SA
FINISH:	Matte black or Flat Dark Earth
CAPACITY:	15+1
MSRP:	\$1,399



► CZ P-09

Described by CZ as the "King of Capacity," the suppressor-ready P-09 puts 19+1 rounds of 9mm in the hands of any operator going into harm's way. CZ equips this polymer-framed pistol with the popular Omega trigger, a very smooth DA/SA system. Adaptable to shooters of various hand sizes through the use of interchangeable backstraps, these handguns are ready for any duty assignment thrown at them. For more information, visit cz-usa.com or call 800-955-4486.

SPECS	
CALIBER:	9mm
BARREL:	5.23 inches
OA LENGTH:	8.8 inches
WEIGHT:	29.6 ounces (empty)
GRIPS:	Polymer
SIGHTS:	Three-dot
ACTION:	DA/SA
FINISH:	Matte black
CAPACITY:	19+1
MSRP:	\$577



➤ Glock 17 TB

Suited for any difficult operation, the suppressor-ready Glock 17 TB features the rugged reliability for which the company is known. A 5.04-inch, threaded barrel and high-profile sights make this gun the top choice for many teams needing suppressed pistols. Glock also offers threaded-barrel versions for the Gen3 G19 and G23 as well as G21 SF. For more information, visit glock.com or call 770-432-1202.

➤ The G17 TB's barrel, made in Austria with Glock's polygonal rifling, features a European-style left-hand, 13.5x1 thread pattern.

CALIBER:	9mm
BARREL:	5.04 inches
OA LENGTH:	8.35 inches
WEIGHT:	22.4 ounces (empty)
GRIPS:	Polymer
SIGHTS:	Fixed
ACTION:	Safe Action
FINISH:	Matte black
CAPACITY:	17+1
MSRP:	\$649

SPECS

➤ HK45 Tactical

With a proud history of arming militaries and police agencies throughout the free world, it is no surprise to see Heckler & Koch making a top-tier combat pistol designed for suppressed operation. The HK45 Tactical is chambered for the .45 ACP and carries 10 rounds in its magazine. Available in black, tan or green, the polymer frame has an integral Picatinny rail for adding lights, lasers and other accessories. Interchangeable grip panels make it easy for shooters to configure the grip to fit their hands best. Also note the long, ambidextrous slide release. For more information, visit hk-usa.com or call 706-568-1906.



CALIBER:	.45 ACP
BARREL:	4.46 inches
OA LENGTH:	8.03 inches
WEIGHT:	31.2 ounces (empty)
GRIPS:	Polymer
SIGHTS:	Three-dot
ACTION:	DA/SA
FINISH:	Matte black, tan, OD green
CAPACITY:	10+1
MSRP:	\$1,399

SPECS



➤ Kimber Custom TLE/RL II (TFS)

Kimber 1911 pistols are carried by some of the top SWAT and military units in the world. The Custom TLE/RL II (TFS) has a match-grade, 5.5-inch barrel that is threaded for the easy attachment of a sound suppressor. A light, crisp trigger, combined with Meprolight night sights, helps to make this a precise shooter. For more information, visit kimberamerica.com or call 888-243-4522.

CALIBER:	.45 ACP
BARREL:	5.5 inches
OA LENGTH:	8.7 inches
WEIGHT:	39 ounces (empty)
GRIPS:	Synthetic
SIGHTS:	Three-dot tritium
ACTION:	SA
FINISH:	Matte black
CAPACITY:	8+1
MSRP:	\$1,326

SPECS



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MasterPiece MPA930DMG

Chambered in 9mm, these hammer-fired pistols take standard

Glock magazines and come ready for a sound suppressor on their 3.5-inch, threaded barrels. MasterPiece Arms offers the MPA930DMG with a variety of Cerakote finishes, including black, Flat Dark Earth and Burnt Bronze. Adjustable sights are standard, as is the accessory rail for adding a fast-targeting reflex sight. For more information, visit masterpiecearms.com or call 770-832-9430.

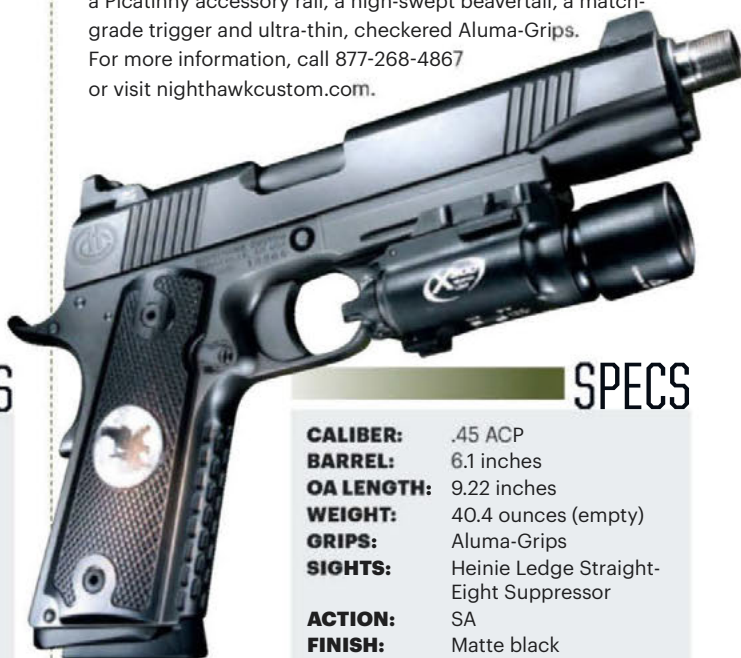
SPECS

MasterPiece's MPA930DMG utilizes Glock magazines and accepts reflex sights. Also note the built-in sling loop at the rear of the receiver.

CALIBER:	9mm
BARREL:	3.5 inches
OA LENGTH:	8 inches
WEIGHT:	46 ounces (empty)
GRIPS:	Decal Grip
SIGHTS:	Adjustable
ACTION:	SA
FINISH:	Black, Burnt Bronze, Flat Dark Earth, gunmetal, tungsten
CAPACITY:	17+1
MSRP:	\$679

Nighthawk AAC Recon

Ready for a lifetime of service, the Nighthawk Custom AAC Recon is a high-quality 1911 with all of the features needed for a suppressed pistol. The match-grade barrel is threaded and is matched with a set of Heinie Ledge Straight Eight Suppressor sights that will clear even the largest suppressors. The forged frame and slide are precisely machined to produce a gun that looks as good as it runs. More of the AAC Recon's features include front and rear slide serrations, a Picatinny accessory rail, a high-swept beavertail, a match-grade trigger and ultra-thin, checkered Aluma-Grips. For more information, call 877-268-4867 or visit nighthawkcustom.com.



SPECS

CALIBER:	.45 ACP
BARREL:	6.1 inches
OA LENGTH:	9.22 inches
WEIGHT:	40.4 ounces (empty)
GRIPS:	Aluma-Grips
SIGHTS:	Heinie Ledge Straight-Eight Suppressor
ACTION:	SA
FINISH:	Matte black
CAPACITY:	8+1
MSRP:	\$3,595



The sleek Black Ops Combat 1911 sports tall suppressor sights, a 14+1 capacity and VZ Operator G10 grips.

SPECS

CALIBER:	.45 ACP
BARREL:	4.2 inches
OA LENGTH:	8.9 inches
WEIGHT:	41.1 ounces (empty)
GRIPS:	VZ Operator G10
SIGHTS:	Tall suppressor
ACTION:	SA
FINISH:	Black Cerakote
CAPACITY:	14+1
MSRP:	\$1,325

Para Black Ops Combat

Para is known for making 1911 pistols with double-column magazines, and that is exactly what you get with the Black Ops Combat, which holds 14+1 rounds of .45 ACP ammo. This, combined with its threaded barrel, makes the pistol ideal for tactical operators engaged in high-stakes missions. High-profile sights, VZ Operator G10 grips and an accessory rail are just some of the features these guns offer. For more information, visit para-usa.com or call 888-999-9386.



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► Remington 1911 R1 Enhanced Threaded Barrel

Remington offers this threaded-barrel 1911 as part of its R1 Enhanced line. The gun includes tall sights for aiming over a large suppressor. The stainless steel, threaded barrel comes with a thread protector, and the left-side-mounted thumb safety is wider than normal for easier manipulations. The gun also includes front and rear slide serrations, wood laminate grips, a serrated, skeletonized trigger and a pair of eight-round magazines with bumper pads. For more information, visit remington.com or call 877-801-1911.



SPECS

CALIBER:	.45 ACP
BARREL:	5 inches
OA LENGTH:	9 inches
WEIGHT:	42 ounces (empty)
GRIPS:	Wood laminate
SIGHTS:	Fixed
ACTION:	SA
FINISH:	Matte black
CAPACITY:	8+1
MSRP:	\$1,158



► Sig Sauer P226 Combat TB

Few arms are as battle tested as the P226 from Sig Sauer, serving everyone from Navy SEALs to street cops. The P226 Combat TB adds a hard-chromed, threaded barrel for suppressed work. Additionally, Sig Sauer finishes the frame in Flat Dark Earth and phosphate treats all of the internal components for extreme corrosion resistance. SIGLITE night sights, a Pica-tinny accessory rail and classic good looks are all standard on this pistol. For more information, visit sigsauer.com or call 603-610-3000.

SPECS

CALIBER:	9mm
BARREL:	5 inches
OA LENGTH:	8.3 inches
WEIGHT:	35.3 ounces (empty)
GRIPS:	Polymer
SIGHTS:	SIGLITE night
ACTION:	DA/SA
FINISH:	Matte black/FDE
CAPACITY:	10+1, 15+1, 20+1
MSRP:	\$1,348

Aside from its threaded barrel, Sig Sauer's P226 Combat TB comes with a black slide, a Flat Dark Earth frame and SIGLITE night sights.



SPECS

CALIBER:	.45 ACP
BARREL:	4.2 inches
OA LENGTH:	8.9 inches
WEIGHT:	41.1 ounces (empty)
GRIPS:	G10
SIGHTS:	Night sights
ACTION:	SA
FINISH:	Black Cerakote
CAPACITY:	8+1
MSRP:	\$1,999

► STI Tactical SS 4.0 TR

John Browning's original 1911 served U.S. combat troops well for decades, and the STI Tactical SS 4.0 TR aims to do the same. This pistol is suppressor ready with a threaded bull barrel, and adds an accessory rail and night sights to enhance the operator's ability to get the job done. The slide and frame are finished in black Cerakote, and an extended magazine well and ambidextrous safety are standard. For more information, visit stiguns.com or call 512-819-0656.



► Smith & Wesson M&P9 Threaded Barrel Kit

Perfect for SWAT officers and others whose duties can frequently change, Smith & Wesson offers the M&P9 with its Threaded Barrel Kit. Included are a standard 4.25-inch duty barrel and a threaded 4.75-inch barrel. With a quick field-stripping, the gun, with its 17-round magazine, can be converted from standard duty use to suppressed operation in seconds. Smith & Wesson also offers its Threaded Barrel Kit for the M&P45. For more information, visit smith-wesson.com or call 800-331-0852.

SPECS

Smith & Wesson's M&P9 Threaded Barrel Kit makes it easy for officers to quickly switch from patrol duties to suppressed SWAT operations.

CALIBER:	9mm
BARREL:	4.25 and 4.75 inches
OA LENGTH:	7.63 inches
WEIGHT:	24 ounces (empty)
GRIPS:	Polymer
SIGHTS:	Three-dot
ACTION:	Striker-fired
FINISH:	Matte black
CAPACITY:	17+1
MSRP:	\$669



► Sphinx SDP Compact Alpha

Designed to fill multiple roles, the Sphinx SDP Compact Alpha with a threaded barrel is small enough to be carried covertly, yet still large enough to be used in tactical missions.

The pistol features a double-action/single-action (DA/SA) trigger system; a hand-fitted slide that rides on rails within the frame; a large, squared triggerguard; a Picatinny rail for accessories; interchangeable polymer grips; snag-free sights; and ambidextrous controls. For more information, visit sphinxarms.com or call 855-574-7787.

SPECS

The SDP Compact Alpha holds 15+1 rounds of 9mm ammo and comes with a thread protector and interchangeable grip panels.

CALIBER:	9mm
BARREL:	3.7 inches
OA LENGTH:	7.4 inches
WEIGHT:	28.4 ounces (empty)
GRIPS:	Polymer
SIGHTS:	Fixed
ACTION:	DA/SA
FINISH:	Matte black
CAPACITY:	15+1
MSRP:	\$995

► Walther PPQ M2 SD

With a focus on pistol ergonomics, Walther designed the PPQ M2 SD to be a very reliable and accurate suppressed pistol. The gun is extremely resistant to corrosion, and the polymer frame has proven to be very durable. Both 15- and 17-round magazines are available for this gun, giving it an ample supply of on-board ammunition. For more information, visit waltherarms.com or call 479-242-8500. **SW**

“Both 15- and 17-round magazines are available for this gun, giving it an ample supply of on-board ammunition.”



SPECS

CALIBER:	9mm
BARREL:	4.6 inches
OA LENGTH:	7.8 inches
WEIGHT:	25.6 ounces (empty)
GRIPS:	Polymer
SIGHTS:	Three-dot
ACTION:	Striker-fired
FINISH:	Matte black
CAPACITY:	15+1, 17+1
MSRP:	\$649

GUN TEST

To achieve its light weight, the AIR 15 has magnesium alloy parts, a thin barrel and other upgrades. Shown with a Bushnell AR Optics 1-4x24mm scope and Magpul sights.

"This carbine is... a game-changer in terms of functionality and weight reduction. In fact, the carbine weighs less than 5 pounds."

AIR 15 RECON 5.56

Ultra-lightweight
MAG Tactical Systems AR
cuts weight without losing an
ounce of performance!

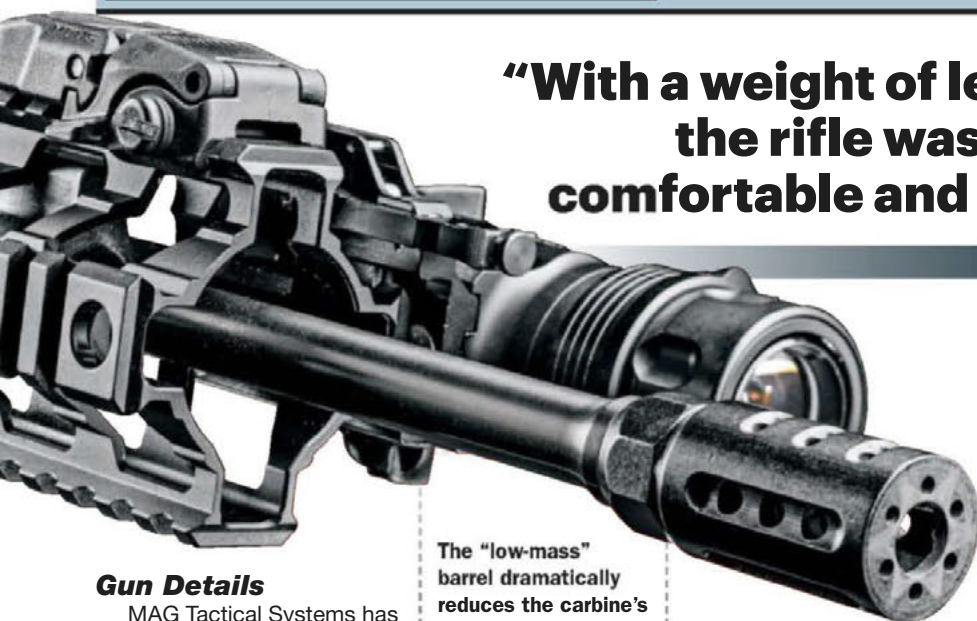
BY JORGE AMSELLE
PHOTOS BY STEVE WOODS

For a long time, the trend in ARs was to see who could add the most features and accessories. The result of this arms race was that ARs became increasingly heavier and heavier, to the point where the whole concept of the AR as a light rifle had become moot. Today there is a new trend toward weight reduction driven partially by those who actually carry patrol and duty rifles as well as those in more active types of competitive shooting, such as 3-Gun.

Tactical operators looking for a more comfortable rifle, and competitors looking for a faster race gun, can now turn to MAG Tactical Systems out of Newburgh, Indiana, and its new AIR 15 Recon rifle. This carbine is far more than your standard semi-automatic, 5.56mm NATO-chambered, direct-impingement AR—it is a game-changer in terms of functionality and weight reduction. In fact, the carbine weighs less than 5 pounds.



**“With a weight of less than 5 pounds...
the rifle was easy to use,
comfortable and extremely handy.”**



Gun Details

MAG Tactical Systems has pioneered the use of magnesium alloy in the construction of its upper and lower receivers, achieving a weight reduction of 35 percent less than standard aluminum receivers. Magnesium is one of the lightest metals used for any structural components or machinery, and it is popular in the automotive and aerospace industries. Although the specific composition of the alloy the company is using is proprietary, it is usually mostly magnesium with a small percentage of aluminum for added strength.

The genesis of the use of magnesium alloy for AR receivers came from the experience of the owners of MAG Tactical Systems in the metal-plating industry. Manager of Operations Bill King has 20 years of experience in dealing with materials such as silicon-carbide-reinforced aluminum (tank armor) and magnesium.

Of course, magnesium is highly flammable, but not so much in bulk form. Still, in some industries, small amounts of calcium can be added to increase the ignition temperature. Unless you plan on throwing your AR into a fire strong enough to destroy it, this isn't much of a concern. Magnesium also has natural corrosion resistance, but to help improve this aspect of its rifles, MAG Tactical Systems also Cerakotes the receivers.

In fact, both upper and lower receivers feature a custom double coating with an initial layer of high-phosphorous nickel before the Cerakote finish is applied. Cerakote has a well-earned reputation for being the toughest and most corrosion-resistant finish you can apply to metal parts today. The upper and lower receivers are also sold individually in a variety of colors for those looking to build their own custom, lightweight AR-platform carbine.

The lower receiver has an integral,

The “low-mass” barrel dramatically reduces the carbine’s weight. Also note the Light Weight Viper muzzle brake.

enlarged triggerguard for ease of use with gloves and includes a special, extended

trigger and hammer pins to ensure reliability and a proper fit. The controls are all standard AR, with a very positive safety selector that engages with a resounding *click*. The upper receiver includes a standard steel forward assist and dust cover.

However, lightweight upper and lower receivers are only the beginning of building a carbine that weighs less than 5 pounds. To achieve that level of weight reduction, you need to pay attention to every single detail.

The 16-inch, low-mass barrel has a mil-spec 1-in-7-inch twist rate, which is ideal for stabilizing heavier bullets than the slower 1-in-9-inch twist rate more commonly seen in commercial rifles. The entire barrel has a black nitride finish,

which involves using salt-bath nitrocarburizing casehardening, leaving a coating directly on the metal that is much stronger than other finishes. The result is an extremely corrosion-resistant barrel with improved lubricity as well as wear and fatigue resistance. This also dispenses with the need for a chrome-lined barrel and can actually improve accuracy, as chrome lining can be unevenly applied.

The company isn't kidding when it says “low mass.” Custom made for MAG Tactical Systems by Faxon Machining, the barrels start from bar stock and are deep-hole drilled and rifled. After they are coated, they are sent back for a final air gauging and proof testing. On my calipers, the barrel diameter was only half an inch. Considering the diameter of the 5.56mm NATO round, this leaves a slim tube of steel surrounding the bullet as it travels down the barrel.

At the rear of the barrel extension are M4 feed ramps, which are cut wider and lower than on a standard AR rifle and aid in positively and reliably feeding rounds from the magazine into the chamber. This can be especially important in inclement conditions or when the carbine becomes heavily fouled. The muzzle includes standard 5.56mm 1/2x28 threading. MAG Tactical Systems' Light Weight Viper muzzle brake, 2 inches long and weighing

SPECIFICATIONS

MAG TACTICAL SYSTEMS AIR 15 RECON

CALIBER:	5.56mm NATO
BARREL	16 inches
OA LENGTH:	32.25-35.75 inches
WEIGHT	4.8 pounds (empty)
STOCK:	Collapsible
SIGHTS	Magpul MBUS
ACTION:	Direct impingement semi-auto
FINISH	Black Cerakote
CAPACITY:	30+1
MSRP:	\$1,400



PERFORMANCE

LOAD	VELOCITY	ACCURACY
Black Hills 60 SP	2,825	2.04
Hornady 75 BTHP	2,521	1.68
Winchester 55 FMJ	3,072	3.30

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.





1. The AIR 15 Recon's controls, including the left-side-mounted safety and bolt release, are in standard AR locations.
2. Note the Hogue rubber overmolded pistol grip and the integral, enlarged triggerguard.
3. The 12-inch Fortis REV handguard features Picatinny rails and KeyMod slots for adding mission-critical accessories.

only 1 ounce, comes installed. Made from 6061-T6 aluminum with a black anodized finish, it does a very good job of reducing both muzzle rise and recoil.

The mid-length gas system also features a low-profile, low-mass, screw-on gas block, and the barrel remains free-floating thanks to the Fortis REV lightweight handguard. This 12-inch handguard weighs just over 9 ounces and features full-length Picatinny rail sections on the top and bottom and smaller 1-inch-long rails sections at the front on the right and left sides. These also feature quick-detach (QD) sling attachment

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The full-length Picatinny top rail makes adding optics, night vision, laser systems and backup sights much easier.

points, and additional QD sling attachment points are located at the rear of the handguard, on the right and left sides.

Along the sides, the Fortis REV has KeyMod rail slots for added versatility, and the one piece design is made from 6061-T6 aluminum and hardcoat anodized for significant corrosion resistance and strength. The handguard is heavily skeletonized for weight savings—to the point where you could easily reach inside and touch a hot barrel, so some caution should be exercised.

The Hogue pistol grip features that company's rubber overmolding and pebbled texture. The grip is extremely ergonomic and comfortable, and it does an excellent job of offering a secure handhold. The front and rear of the grip remain smooth but feature a nice palm swell and

an extended section for the web of the hand that helps bring the index finger in line with the trigger. The six-position collapsible stock allows for multiple length-of-pull adjustments, accommodating several users with different statures or those wearing heavy clothing or body armor. This M4-style, polymer stock also features an ambidextrous QD sling swivel attachment point at the front for added convenience and versatility.

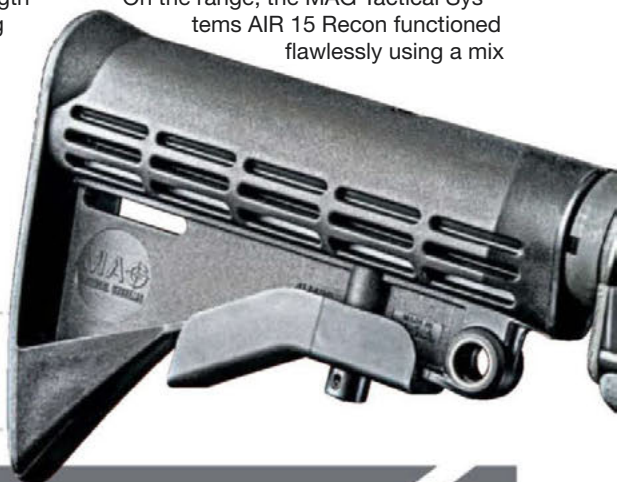
Internally, the AIR 15 Recon also seeks to reduce weight and improve

The collapsible stock features an ambidextrous QD sling attachment point near the front.

performance with several excellent features. The skeletonized, low-mass bolt carrier weighs 25 percent less than a standard bolt carrier group and still has forward assist cuts, so nothing is sacrificed in terms of functionality. The low-mass bolt carrier group is made from 8620 steel and fully black nitride coated for superior lubricity and corrosion and wear resistance. The premium trigger group features a PTFE-Teflon-coated hammer, trigger and pins for smooth operation. Indeed, the trigger group resolves my most common complaint with standard AR triggers by delivering a crisp, single-stage, 5.5-pound trigger with minimal creep.

Range Time

On the range, the MAG Tactical Systems AIR 15 Recon functioned flawlessly using a mix



KRYTAC AIRSOFT GUNS

By Richard Johnson

As a low-cost force-on-force training option, it is hard to beat airsoft. Airsoft guns launch small, non-lethal plastic balls instead of costly marking rounds. The guns can appear very realistic, and frequently the guns can use the same accessories an officer or service member would normally mount on his or her duty weapon.

KRYTAC is the research and design team of KRISS, a fire-

arms manufacturer based in Switzerland. Recently, KRISS began to sell high-quality airsoft guns under the brand name KRYTAC. Two of them, the Trident M4 CRB and the Trident M4 SPR, may fit very well into your training regimen.

AIRSOFT ARs: Both of the airsoft guns are configured as M4-style rifles with free-floating KeyMod handguards. The CRB has a 10.5-inch barrel, while the SPR has a longer 14.5-inch barrel.

Quick-detach (QD) sling attachment points are standard on both guns. Backup iron sights also come on

both guns. However, both air rifles have a Picatinny-type rail on the upper that can be fitted with different sights or an optic for more realistic training.

KRYTAC's airsoft guns use an electro-pneumatic system with a high-torque motor to launch projectiles at velocities up to 390 fps. Both guns have a rate of fire in excess of 1,400 rounds per minute. According to KRYTAC, the gears used in the guns have been Rockwell tested and are much stronger than industry norms. For more information, visit krytac.com or call 855-574-7787.



KRYTAC's M4 CRB features a 10.5-inch barrel, a free-floating KeyMod handguard and AR-like controls for optimal training.

of ammunition and bullet weights during two days of testing right out of the box with no maintenance. With a weight of less than 5 pounds (unloaded and without sights installed), and with its short carbine-length barrel and collapsible stock, the AIR 15 Recon rifle was easy to use, comfortable and extremely handy. This rifle is very much optics-ready and comes standard with fully adjustable Magpul MBUS Gen 2 flip-up front and rear sights.

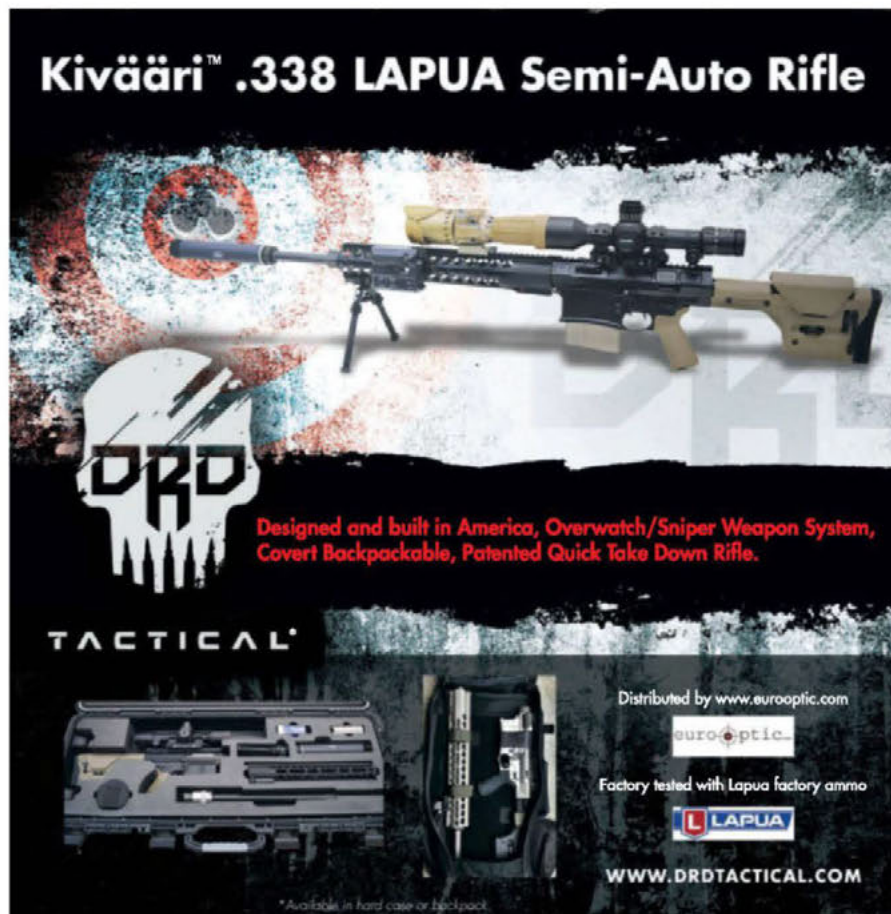
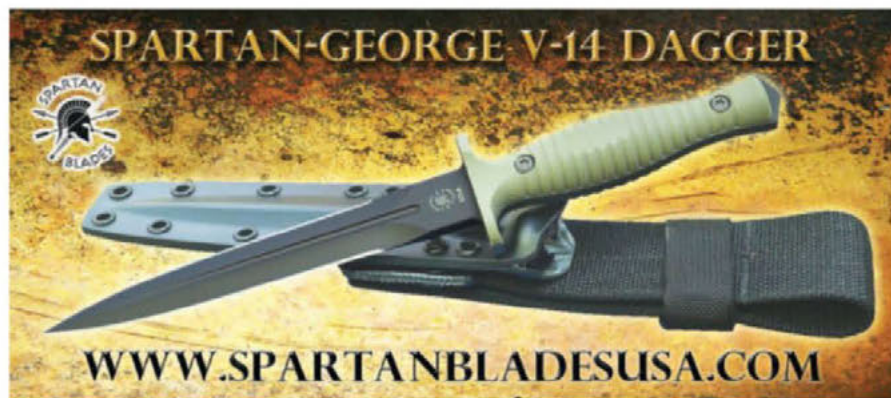
For rapid-fire drills, I used the EOTech EXPS2 holographic sight with a G33 3.25X magnifier, both of which feature QD levers for ease of use and installation. The EXPS2 sight features parallax-free optics with 1X magnification and unlimited eye relief, and it's perfect for low-light conditions and super-fast target acquisition. It is also built tough for field duty and will operate in temperatures from -40 to 150 degrees Fahrenheit. The standard reticle is a 65-MOA circle with a 1-MOA aiming dot, which can be used together for range estimation.

The G33 3.25X magnifier gives you just enough magnification so you can make hits out to 600 yards, and precise shots at 100 yards are a breeze. It has a generous 2.2 inches of eye relief and an increased field of view angle. The magnifier can also be easily rotated out of the way when not needed.

For accuracy testing, I used a Trijicon 3-9x40mm TR20-2 AccuPoint scope with a mil-dot crosshair reticle featuring an amber dot. The excellent fiber optics of the Trijicon scope gather ambient light to illuminate the center amber dot without batteries. This is a very welcome feature, especially for anyone who has hit the range with a red dot or illuminated scope only to find a dead battery.

Firing at 100 yards from a stable benchrest, I found the AIR 15 Recon was very sensitive to bullet weight, showing a distinct preference for the heavier ammunition, and five-shot groups across all types of ammunition averaged about 3 MOA. My best group, using 75-grain Hornady Steel Match BTHP ammo, was 1.6 inches. It's not precision rifle accuracy, but it should be noted that this is well within military specifications.

MAG Tactical Systems is to be commended for helping everyone who wants a return to a lightweight, easy-to-carry, fast-handling, reliable AR achieve this worthwhile goal. You can make a lighter AR, but not by much, and not without sacrificing some functions many of those in the trenches consider important. For more information, call 812-490-8770 or visit magtacticalsystems.com. **SW**



DANIEL DEFENSE

MK18

➔ **SOCOM-BORN 5.56mm SBR dominates in close quarters with unshakeable reliability!**



BY DAVID BAHDE



The author ran the Daniel Defense MK18 through training sponsored by SureFire, and the SBR never missed a beat, even after several hundred rounds.

Making a direct-impingement AR work reliably with a short barrel can be a tough task. Many short-barreled ARs run much better these days, but it's not always a given, especially with some ammunition. Most officers are assigned ammunition, which can make this even more problematic. Still, the advantages of a short-barreled rifle (SBR) are significant, especially when you're working on an entry team. Sure, you can work in close quarters with a longer barrel, but it's just easier with a 10-inch barrel. Piston-driven SBRs can be a bit more reliable, but they are generally more expensive. Direct-impingement AR rifles, on the other hand, are simple machines that are cost effective to buy or build.

Things get a little more complicated when you add a suppressor to a short barrel. Reliable operation with direct-impingement guns is largely dependent on proper bolt carrier timing, and suppressors can increase the bolt speed significantly. Suppressing a perfectly functioning short-barreled AR can turn the gun into a malfunctioning nightmare. Changing the buffer and buffer spring, or installing an adjustable gas block, can make it work, but it's a process. It's nice to have a rifle that just works and works without having to mess with it.

One of the companies doing an incredibly good job of this is Daniel Defense. I've tested several Daniel Defense weapons, and they've all worked very well right out of the box. The company's ARs are simple, lightweight, direct-impingement

guns available at reasonable prices. I recently attended a SureFire event that added another Daniel Defense rifle to the list of ARs that just plain work, even suppressed.

Gun Details

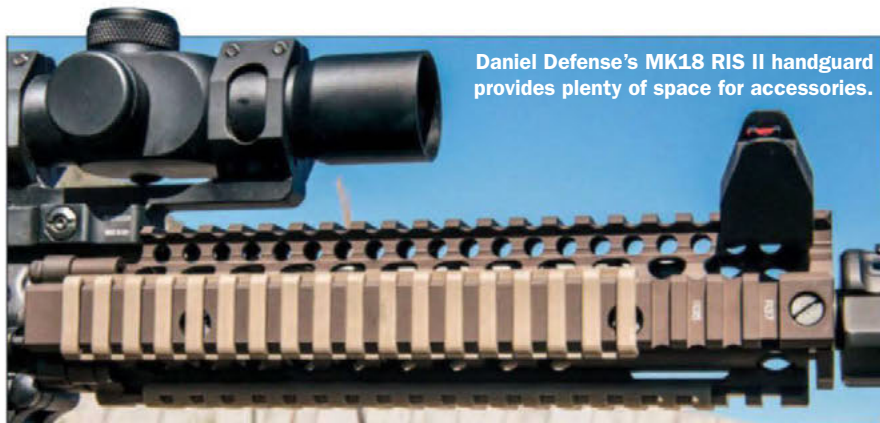
SureFire's media events are known for their realistic testing of equipment. Avoiding the usual low-key events, SureFire tends to put the participants and equipment through actual training. This event was no exception—attendees went through Solutions Group International's High-Risk Dignitary Protection course. Designed to familiarize police units with the basics of operating a dignitary protection team, it requires a weapon that truly works.

Daniel Defense provided the rifles for the event, and most had short barrels. All were equipped with SureFire's SOCOM556-RC suppressors. Many of the rifles were Daniel Defense MK18 SBRs in



Daniel Defense's new MK18 in 5.56mm NATO is built to replicate the same short-barreled rifle U.S. Special Operations Command warriors use in some of the harshest conditions imaginable. Like its SOCOM brethren, this gun will keep running—no matter what!

DANIEL DEFENSE MK18



Daniel Defense's MK18 RIS II handguard provides plenty of space for accessories.



The author tested the MK18 upper on his registered Daniel Defense SBR lower, which features an ambidextrous magazine release and a 60-degree safety selector (above). He also equipped the test rifle with a set of Dueck Defense RTS offset sights (above left) and a Bravo Company charging handle (right).



5.56mm NATO, including the one I used. Each was equipped with a U.S. Optics SR-8C 1-8X scope and Dueck Defense sights. Equipped with an illuminated 8C Mil reticle, the SR-8C is designed for both close quarters and longer ranges. Since the MK18 performed so well during the event, I ordered one for more thorough testing at my home range.

The MK18 is a factory SBR available to all who can legally possess them, and it's built to the same specifications as its select-fire military and police equivalent. It starts with a Daniel Defense forged upper receiver mated to a 10.3-inch, cold-hammer-forged, chrome-lined barrel with a 1-in-7-inch twist rate and a 5.56mm NATO chamber. It also has M4 feed ramps for reliable functioning in harsh conditions. The barrel is capped with an A2-style flash suppressor, but SureFire SOCOM muzzle brakes/adaptors are available upon request.

Gas is channeled through a CNC-machined 4140 steel gas block as part of the carbine-length system. Surrounding the barrel and gas system is Daniel Defense's MK18 RIS II handguard, which the company supplies to USSOCOM. Available in black or Flat Dark Earth, the lightweight RIS II handguard provides lots of rail space along with QD sling cups. Rounding out the upper receiver is an M16-profile, magnetic-particle (MP) tested, chrome-lined and properly staked bolt carrier group.

For testing at my home range, I used my Daniel Defense mil-spec lower, which is licensed for SBR use. These lower receivers are machined from 7075-T6 aluminum and include a flared magazine well and QD swivel attachments at the rear. Daniel Defense's complete MK18 rifles feature the company's new collapsible stock and pistol grip, which feature attractive and functional rubber overmolding for enhanced control. My personal

Daniel Defense lower is equipped with an ambidextrous magazine release, a PWS buffer tube and a Geissele Super Semi-Automatic (SSA) two-stage trigger.

My test rifle also came with a SureFire SOCOM muzzle brake, so I attached my SureFire SOCOM762-MINI sound suppressor. U.S. Optics let me take the SR-8C scope I used at the school back with me to thoroughly test the MK18. I also kept the Dueck Defense offset sights in place to round out the package. In all, my test rifle was configured as closely as possible to the one I used during the SureFire event.

Range Time

During the High-Risk Dignitary Protection course, my issued MK18

SPECIFICATIONS

DANIEL DEFENSE MK18

CALIBER:	5.56mm NATO
BARREL:	10.3 inches
OA LENGTH:	26.75-29.88 inches
WEIGHT:	5.88 pounds (empty)
STOCK:	Collapsible
SIGHTS:	None
ACTION:	Direct impingement semi-auto
FINISH:	Matte black, Flat Dark Earth
CAPACITY:	30+1
MSRP:	\$1,749

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Hornady 60 TAP	2,650	1.40
Liberty 55 Silverado	2,850	1.10
Silver State Armory 64 PPT Bonded	2,892	0.75
Silver State Armory 77 OTM	2,480	1.25
Winchester 55 FMJ	2,725	2.00

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.



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DANIEL DEFENSE MK18

ran flawlessly. The suppressor was attached throughout the course, too. There were no malfunctions, even under some pretty intense fire. The SOCOM556-RC is a rugged suppressor built specifically for a military contract. This is the second time I've used a short-barreled Daniel Defense AR with this suppressor, and the utter reliability always amazes me. As I said, some 10-inch-barreled ARs, suppressed or not, can be unreliable. But that just does not seem to be the case with Daniel Defense rifles. Shooting high round counts in a direct-impingement gun with a suppressor can really gum up the works, and the rifles we used during the course got pretty dirty, but they kept on working.

Most of our shooting was in close quarters, from 50 yards and in. Using the U.S. Optics scope was pretty easy. At really close range, turning on the lighted reticle essentially gives you a red dot to work with. With the scope's 3.7 inches of eye relief, it was possible to get a solid sight picture, even working around obstacles and in some very unconventional positions. The scope on my rifle never had an issue, and it still works perfectly after several subsequent tests.

Back at my home range, the only real difference in MK18 configurations was the use of a .30-caliber suppressor—a short one at that. If there was any difference in function, it was less gas in the action and a bit slower bolt speed. I prefer to run this SOCOM762-MINI on 5.56mm rifles, especially if they have shorter barrels. Sure, this setup is not as quiet, but it's lighter, shorter and cleaner. It is plenty quiet for operations, and the SOCOM762-MINI is very strong. There was also no



The MK18 has a 10.3-inch, cold-hammer-forged barrel, and the author's test model came with a SureFire SOCOM muzzle brake/adaptor.

discernible shift in the point of impact at 50 yards, and any at 100 yards amounted to less than an inch overall.

This MK18 functioned just as well as the one I used during the training—not a single issue, even under some pretty significant rapid-fire strings. If you're going to burn ammo quickly, make sure you wear gloves; it will get hot. The suppressor mated up very closely to the forend, making for a short overall package. The MK18 was very handy and fast on target. And it stayed on target with little or no recoil.

The MK18's accuracy proved to be excellent, with my best group measuring a tad over an inch at 100 yards using Silver State Armory's 64-grain PPT round. Since this round is just about perfect for duty use, it was a nice match. Everything fell right around an inch and a half, with the largest group measuring just under 2 inches. All of the ammo ran without issue.

Removing the suppressor, the SOCOM

“During the High-Risk Dignitary Protection course, my issued MK18 ran flawlessly.”



The High-Risk Dignitary Protection course taught attendees, using only Daniel Defense rifles, to form tight groups around the VIP.

muzzle brake did its job well, keeping the rifle on target. It is just really loud on its own, however, so if this is a duty gun, opt for the version that comes with a flash suppressor—one that will reduce your flash signature without taking the guy next to you out of the fight.

Final Notes

The U.S. Optics SR-8C has really grown on me. Having the 8X magnification is nice for identifying threats, and it provides all of the magnification you will ever need. Set at 1X with the illuminated reticle, the SR-8C works pretty much like any red dot. Over time, I find my field of view actually less obstructed and clearer with optics. It can be a bit harder to get a perfect sight picture, but when you do, it is clearer, especially if the scope is a truly parallax-free 1X.

Daniel Defense's short-barreled guns are the most consistently reliable I've tested. There are certainly others that work, but every Daniel Defense SBR I've tested has worked, even suppressed. They are lightweight, reliable, well built and reasonably priced, and the MK18 is no exception. For more information, visit danieldefense.com or call 866-554-4867. **SW**

SureFire SOCOM 556-RC

USSOCOM-approved suppressor ready for CQB operations!

By Michael O. Humphries

Selected by U.S. Special Operations Command for use on 5.56mm M4 and MK18 carbines, SureFire's SOCOM556-RC suppressor is designed for frontline action. The Fast-Attach suppressor adds a mere 4 inches in overall length on average to a weapon to provide compact performance and impressive sound reduction. Advanced internal venting minimizes backpressure to reduce both cyclic rates and gas blowback



on users, and an integrated blast shield maximizes the suppressor's life cycle.

The suppressor is constructed from a combination of high-temperature alloys and heat-treated stainless steel, all covered with a low-key matte finish in black or Dark Earth. The suppressor is compatible with SureFire's latest muzzle brake/adaptor and flash hider/adaptor systems. In addition, the Fast-Attach system ensures minimal and consistent point-of-impact shifts when removed and installed, and redundant-welded subcomponents eliminate parts loosening over the life of the product. For more information, visit surefire.com or call 800-828-8809.



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BRAZIL'S PGM SNIPER RIFLES

The Ultima Ratio and Hecate II offer the sub-MOA precision elite Tonelero snipers demand!

BY RONALDO OLIVE



There was a time, long ago, when a sharpshooter's rifle was merely a standard infantryman's gun fitted with a telescopic sight, but this gradually progressed to the

point where snipers were given factory-accurized weapons with impressive scopes. As time went by, however, the market began to offer dedicated or highly modified guns to fit the sniping role, with the models available around the world today presenting a wide array of calibers, configurations and modes of operation. The people in charge of selecting specific weapons to fit the particular needs of their armed forces or law enforcement agencies certainly have a lot of options from which to choose.

In Brazil, the *Corpo de Fuzileiros Navais* (Marine Corps), a branch of the Brazilian Navy, has recently made a major change in the gear available to its snipers. Contrary to what happens in other countries, the local Marine precision shooters are not to be found among the ordinary infantry battalion personnel, but are mainly concentrated in a single unit, the crack *Batalhão de Operações Especiais de Fuzileiros Navais* (Marine Special Operations Battalion), which is also known as the "Tonelero Battalion."

The Ultima Ratio's top Picatinny rail is long enough to allow a Zeiss NSV 600 night-vision device to be attached directly in front of the Schmidt & Bender 3-12x50mm PMII scope.

TOP: A sniper with a Tonelero Battalion GERR team takes aim with his 7.62mm PGM Ultima Ratio rifle.



André Olive Photo



SPECIFICATIONS: PGM ULTIMA RATIO

CALIBER:	7.62mm NATO
BARREL:	22 inches
OA LENGTH:	32-41 inches
WEIGHT:	13.8 pounds (empty)
STOCK:	Tubular, folding
SIGHTS:	None
ACTION:	Bolt
FINISH:	Matte black
CAPACITY:	10+1

■ **_____**

The Last Resource

In addition to its national origin, this weapon is in service with the special operations forces of about 10 countries, and has been used in such hot spots as Afghanistan, Bosnia and Iraq, to name a few. In the third quarter of 2010, the U.S. government reportedly contracted with Drake Associates, the American representative of the French manufacturer, to supply the weapon to unspecified agencies.

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The skeletonized configuration of the .50 BMG Hecate II anti-materiel rifle is evident in this photo. The massive muzzle brake can be quickly removed and replaced with a sound suppressor.

SPECIFICATIONS: PGM HECATE II

CALIBER:	.50 BMG
BARREL:	27.5 inches
OA LENGTH:	55 inches
WEIGHT:	35.3 pounds (empty)
STOCK:	Tubular, folding
SIGHTS:	None
ACTION:	Bolt
FINISH:	Matte black
CAPACITY:	7+1

area. The barrel has four-groove, right-hand rifling in a 1-in-12-inch twist rate, and it's fitted with a muzzle brake that reduces the gun's felt recoil by about 50 percent. For a stealthier mission profile, the brake can be quickly removed using a hex key and replaced with a PGM-made QMS-30 suppressor, a short (9.5 inches) and light (1.65 pounds) unit that reduces the sound level by about 80 percent with subsonic ammunition, or 30 or so percent if supersonic ammo is used.

Another option available for the rifle, and, in fact, chosen by the Brazilian Marine Corps, is to remove the barrel by loosening four 5mm hex screws on the right side of the main body and insert a 16.1-inch-long, fully suppressed unit. This conversion can be accomplished in well under a minute. An additional bonus offered by the gun is that, following the quick barrel change, no additional adjustments are required, as zeroing is maintained for the next shot for the ultimate in repeatability. With the suppressed barrel in place, the Ultima Ratio's overall length increases slightly (from 41 to 46 inches) and weighs more (from 13.8 to 15.6 pounds), but the sound reduction is more than worth that.

Fed by 10-round, steel, detachable box magazines, the PGM rifle has a two-stage trigger that is generally adjusted to a 2.2- to 3.3-pound pull weight. The safety is located on the left side of the receiver, within easy reach of a right-handed shooter's thumb.



With the sound suppressor fitted, the Hecate II is 71 inches long and weighs just over 40 pounds.

The tubular buttstock folds to the left side, and users can adjust the cheek-piece and butt pad. A forward-folding and adjustable butt spike is also available, while the sturdy forward-folding bipod fitted just ahead of the fiberglass handguard offers several different height and tilt adjustments.

As supplied to Brazil, the Ultima Ratio is fitted with a German-made Schmidt & Bender 3-12x50mm PMII scope with a first-focal-plane reticle, thus permitting adequate distance evaluations all the way out 1,500 meters. The rifle's long top Picatinny rail allows add-ons to be fitted directly ahead of the scope, such as the Carl Zeiss NSV 600 night sight attachment chosen by the Tonelero Battalion. Two shorter rails can also be mounted

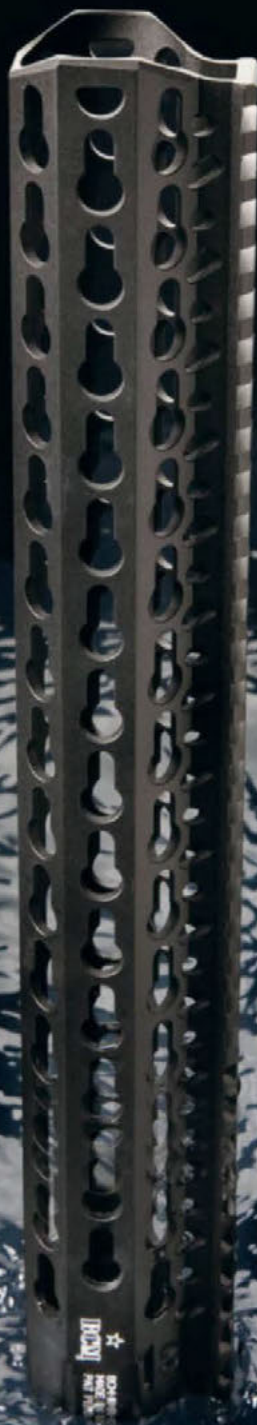
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-BRUCE LEE



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on the sides of the fluted portion of the barrel for other accessories. All in all, the new rifle is fitting in well with the Marine snipers. It's consistently demonstrated its ability to make first-round hits out to 500 meters. Its sub-MOA precision at, say, 100 meters becomes extremely important when used by the Battalion's black-clad *Grupo Especial de Retomada e Resgate* (GERR, or Special Retake and Rescue Group) warriors, who are in charge of hostage-type situations.

The Greek Goddess

The Brazilian Marine Corps has chosen another PGM gun to perform anti-materiel or heavy target interdiction (HTI) duties, the .50 BMG Hecate II rifle. Its name comes from a goddess of Greek mythology, translating into English roughly as "she who operates from afar" or "she who launches darts far." Enough said. This rifle has been in service with the French Army since 1993, with recent recorded participations in Afghanistan and Mali. The weapon has also been chosen by a number of international special operations units.

The rifle shares the general skeletonized configuration of the Ultima Ratio, also utilizing aircraft-grade aluminum alloy in its girder chassis but having a tempered-steel receiver to cope with the higher pressures generated by the heavier .50 BMG round. The receiver, incidentally, has overpressure vents to protect the shooter from powder gases in the event of a cartridge case rupture.

The match-grade, fully free-floating barrel has a tapered profile and eight-groove, 1-in-15-inch-twist rifling. A large reverse-flow muzzle brake reduces felt recoil by around 50 percent, and this can be easily removed in the field with the use of a hex key to install a PGM-made suppressor, the QMS-50. This unit is 18.5 inches long (extending the gun's overall length to 71 inches) and weighs 8.6 pounds, which brings up the Hecate II's weight to just over 40 pounds. A foldable carrying handle is provided for transporting the bulky weapon.

Other similarities to the 7.62mm model include the foldable, fully adjustable stock, and the bipod, while the Picatinny tri-rail structure is somewhat reshaped. The top rail, where the same Schmidt & Bender 3-12x50mm PMII scope is fitted, is also of an extended type to allow for add-on items such as the NSV 600 night sight already mentioned.

Armed with either the 7.62mm Ultima Ratio or the .50 BMG Hecate II, the Brazilian marines are well equipped to face any conceivable threat and deal with it accordingly. For more information, visit drakeassociates.us or call 631-749-1100. **SW**

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BY D.K. PRIDGEN
PHOTOS BY STRAIGHT 8

If Samuel Colt's revolvers made all men equals in the 1800s, I'd like to nominate the shotgun for that title in the succeeding centuries, even though the shotgun saw an appreciable amount of martial use in the 1800s and before. It would seem any firearm striking such fear into the hearts of military opponents that they sentenced captured users to immediate death is pretty special! Shotguns continue to effectively defend home and hearth and serve with military and law enforcement personnel.

While shotguns are not magic wands, nor the devastating weapons the World War I-era Germans felt they were, they are certainly very effective when used correctly. Despite the increased popularity of patrol carbines in law enforcement, shotguns—primarily pump actions—are still in use by patrol officers and others. The United States armed forces currently authorize three shotguns, including the 12-gauge Mossberg 590A1.

**"The reptile-looking
Typhon camo should do a
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helping it blend in."**

“It should come as no surprise that the 590A1 shot and handled well, producing low-recoil 00 buckshot patterns in the sub-8-inch range at 15 yards.”

Mossberg 590A1

The Mossberg 590A1 is a member of the well-established Mossberg 500 family with enhancements made to meet military requirements. The 590A1's predecessor, the 590, incorporated a modified magazine tube and end cap. Introduced in the 1980s, the 590A1 took things a little further with the addition of an aluminum alloy triggerguard and safety, added in response to the military's 3443G materials requirements, as well as a heavier barrel, satisfying the Navy's request to prevent deformation if heavy ship doors were to strike it. Steel parts on the 590A1 are Parkerized, and the barrel features a fixed cylinder-bore choke.

Like all of the 500 family, the 590A1's receiver is milled from weight-saving aluminum alloy. For durability, the bolt locks into a steel barrel extension. All Mossbergs have twin action bars for smoother operation and magazine tubes threaded directly into the receiver. The safety is mounted on the tang, an ambidextrous location easy to reach on a shotgun with a full-sized stock.

Prior to the Army, Navy and Coast Guard's adoption of the 590A1, it competed with a number of shotguns in the usual abuse tests, including being buried in sand and firing a mixture of 3,000 rounds of buckshot and slugs. The 590A1 was the only pump action to pass with no more than three malfunctions. Part of that success results from the Mossberg's design, which discourages dirt and debris from gumming up the action. Following the military's adoption, many law enforcement agencies adopted the Mossberg 590A1 for the same reasons that the armed services had.

Mossberg's 590A1 is not your father's bird gun pressed into a harsher duty. There may be bird guns in its lineage, but the 590A1 has been modified for harsher duties, putting it at the top of the

The 590A1 Special Purpose ships with an 18.5-inch, heavy barrel built for high round counts. The striking Kryptek Typhon camo finish has been applied practically everywhere, including the synthetic buttstock, forend and mag tube end cap.

Mossberg pump shotgun food chain when it comes to tactical duties. With all of its mandated durability, the 590A1 is obviously perfect for the military's needs. As with many weapons with a military background, the 590A1 may seem to possess a little more than what a non-military shotgun—self-defense or law enforcement—might need, but for those who demand only the best when lives are at stake, the confidence the 590A1 provides is certainly worth it.

Mossberg's 590A1 Special Purpose shotguns are available with several sight options, including just a bead front sight, a front blade wearing a highly visible fluorescent orange stripe on the ramp, three-dot rifle sights or a ghost-ring setup. They typically come with either 18.5- or 20-inch barrels. While perusing the Mossberg website recently, I noticed a new finish available on the 590A1 Special Purpose: Kryptek Typhon camouflage. According to Kryptek, Typhon camouflage was designed under the premise that “Darkness is the ally of the predator that prowls at night. Kryptek Typhon serves those who operate when and where others will not venture.”

Gun Details

This 3-inch-chambered 590A1 Special Purpose (officially dubbed the model 51522) sports an 18.5-inch heavy barrel, a ghost ring rear sight and a front ramp with a high-visibility orange stripe. Of course, the first thing you'll notice is the very interesting Kryptek Typhon camouflage that covers the entire shotgun, including the polymer furniture and the sling swivel stud that screws into the magazine cap. Well, everything except the cushiony buttstock at the end of the stock, with its 14-inch length of pull.

Whether hunting game or two-legged predators, the reptile-looking Typhon camo should do a superb job of breaking up the pattern of the shotgun and helping it blend in. Once the Typhon camo is applied, the Mossberg 590A1's original black coloration still shows through where the urban gray pattern doesn't cover it.

The secret to any Kryptek camouflage's performance is that it “utilizes a multi-directional design to effectively conceal in a multitude of terrains that have either a lateral or vertical flow. The bi-level layering of the patterns incorporates background transitional shading and sharp random geometrical foregrounds to create a three-dimensional effect that ensures the

Mossberg 590A1s are known for their large loading ports and skeletonized elevators that discourage dirt and debris from gumming up the action.

utmost in concealment at both close and long ranges." Kryptek's camouflage is described as "the ultimate in passive battlefield deception." I can tell you this: The Typhon camo is definitely an eye-catcher and, based on a couple of my low-light evaluations, it's very effective.

The secret to applying the Mossberg's camouflage is "hydrographic dipped film," or water-transfer printing, which can add decorative surfaces to flat and three-dimensional objects. The hydrographic process can be used on virtually any material because the film is applied when parts are dipped into a water tank in which the film to be applied is floating.

Range Time

Honestly, the 590A1 arrives with just about everything you could ask for, including very usable sights. I



The aluminum safety is mounted on the shotgun's tang, where it's easy to reach for both left- and right-handed operators.



The author's test 590A1 features an aluminum alloy triggerguard, a generous ejection port and a ghost ring rear sight with protective wings.

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MOSSBERG 590A1

LEFT: The shotgun's front sight ramp has a fluorescent orange stripe that stands out from the Kryptek Typhon camo for faster sighting.

RIGHT: The 12-gauge 590A1 Special Purpose offers a 14-inch length of pull as well as a thick, recoil-absorbing rubber buttpad.

could have stripped the ghost-ring rear sight off, added a rail to the receiver and popped a small electronic sight like EOTech's compact and effective MRDS onto the rail. I might've considered that if it were my shotgun, but for this test I kept the ghost-ring sight in place.

And then there is the sling, a much-needed item for duty long guns. At some point every officer needs both of their hands free to search or handcuff a suspect. I usually prefer non-black slings, but it seemed only fitting to give the Typhon-covered 590A1 a black one. I had a black Viking Tactics VTAC sling, complete with

swivels on hand, that was a perfect fit! Mention a VTAC sling and most folks envision rifles, but it worked perfectly with the Mossberg shotgun.

All kitted up, I hauled a ton of shotshells to the range and began banging away at things with Mossberg's 590A1. Birdshot, full-power and reduced-recoil slugs, buckshot—it all worked well in the 590A1—but of course it did, it's a pump! It should come as no surprise that the 590A1 shot and handled well, producing low-recoil 00 buckshot patterns in the sub-8-inch range at 15 yards. Slugs dropped into groups measuring between 1.5 and 2 inches.

Even though the extra rounds of a 20-inch-barreled 590A1 would be nice, I still prefer the maneuverability of the 18.5-inch-barreled version. It seems to track well on moving targets and handles itself better than longer barrels inside close confines. And the 590A1 I tested is an outstanding example of this Mossberg series.

The Mossberg's cylinder-bore barrel has extra-heavy walls to protect it from damage during an operation.

Final Notes

The final verdict on the Kryptek-Typhon-covered Mossberg 590A1 Special Purpose is simple. After all, the Mossberg 590A1 has an excellent reputation built upon decades of battlefield and LEO use. It is solid and should work for years even with heavy use. The improvements made to the 590A1 years ago, including the thicker barrel and the metal triggerguard and safety, are definitely worth it! This robust 12-gauge shotgun has been, and continues to be, a great choice for law enforcement.

Having an effective camouflage such as the Kryptek Typhon on the shotgun is an outstanding bargain for only about \$60 more than a similarly equipped 590A1 without the Kryptek camouflage. Much of the work done in tactical operations is in low light—inside structures, approaching structures, maneuvering through wooded areas, etc. If the operator is wearing effective camouflage, the solid color and straight lines of most firearms could reveal his position. But that's not the case if the firearm has a Kryptek camo finish. And, let's be honest, this particular shotgun really looks outstanding! For more information, visit mossberg.com or call 800-363-3555. **SW**

SPECIFICATIONS

MOSSBERG 590A1 SPECIAL PURPOSE

GAUGE:	12; 3-inch chamber
BARREL	18.5 inches
OA LENGTH:	39.5 inches
WEIGHT	7.5 pounds (empty)
STOCK:	Synthetic
SIGHTS	Front ramp, ghost ring rear
ACTION:	Pump
FINISH:	Kryptek Typhon
CAPACITY:	5+1
MSRP	\$720

PERFORMANCE

BUCKSHOT

Federal FliteControl LE Low Recoil (8 pellets)
Hornady Custom Reduced Recoil (8 pellets)
Remington 00 Managed Recoil (8 pellets)
Speer 00 LE (8 pellets)

PATTERN

3.50
6.75
6.30
7.80

SLUG

Federal 1-ounce Hydra-Shok
Winchester 1-ounce Ranger LE

ACCURACY

2.00
1.55

Buckshot pattern in inches at 15 yards. Slug accuracy for three-shot groups in inches at 25 yards.



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GUN TEST

The new RA-5R V2 from Rhino Arms is designed to bring sub-MOA precision in a tank-tough, battle-ready design. In fact, Rhino guarantees it will shoot tight 0.5-inch, three-shot groups at 100 yards. Shown equipped with an ATN Thor-640 thermal sight.



The bar for what constitutes an exceptionally accurate rifle is continually rising. Twenty years ago, a semi-automatic that shot 1-inch, five-shot groups at 100 yards would be considered among the best rifles available, and only a few companies offered them. Fewer still were ones that shot half-inch groups.

Fortunately, with 21st century advances in the manufacturing

of barrels and bullets, semi-auto rifles that can shoot the 1-inch gold standard of yesterday are no longer best in class but rather the norm. And, what many would think a surprise, making a sub-MOA-accurate rifle is not the exclusive province of long-established gun-makers. Newer firms that have enough manufacturing scale to be considered production makers rather than custom shops are more plentiful than ever.

Rhino Arms of St. Louis, Missouri, is one such newcomer

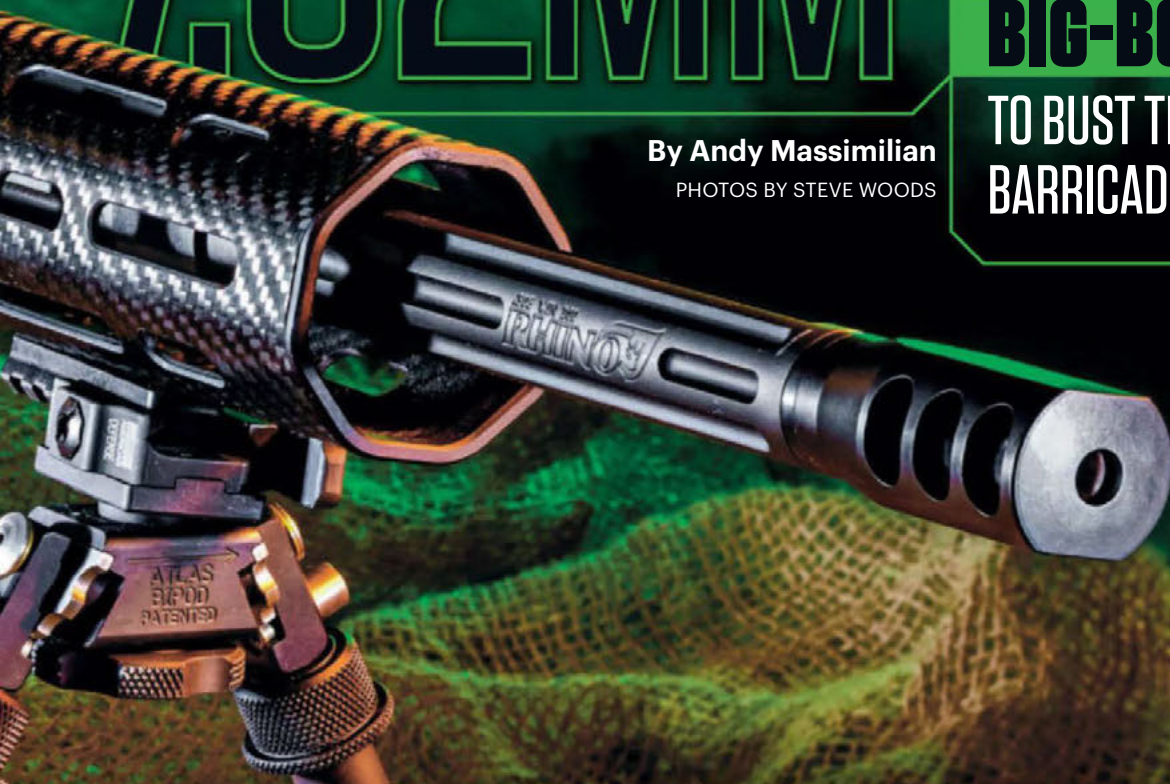
to riflecraft, and it makes match-grade, AR-style rifles in .308 Winchester/7.62mm NATO, 5.56mm NATO, 300 BLK, 7.62x39mm and 6.5 Creedmoor. All of the Rhino rifles have equivalent features and all are guaranteed to shoot a three-shot, half-inch group with match ammunition at 100 yards. Rhino Arms only sells complete rifles, not separate upper or lower receivers, though a Rhino upper will fit

RHINO ARMS RA-5RV2 7.62MM

By Andy Massimilian

PHOTOS BY STEVE WOODS

CUSTOM-GRADE AR
PACKS HARD-CHARGING
BIG-BORE POWER
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DPMS and KAC lower receivers.

Though Rhino Arms is new to rifle-making, the company has an established history in precision milling and grinding, and it puts that experience to use building its rifles. All parts, except the rear stock, grip and barrel blanks are made in-house to exceptionally tight, controlled tolerances. That is unusual, as many AR makers buy the bolt carrier, bolt, trigger and firing pin from outside sources because it's often much more economical to do so. However, Rhino's ability to make them in-house gives them an advantage because the firm

wants exact tolerances and uninterrupted supply.

Gun Details

The RA-5RV2 is chambered in 7.62mm NATO and operates using the direct impingement gas system, which is simpler and generally makes a more accurate rifle than some piston designs. Gas is bled through an adjustable, mid-length-mounted gas block made from stainless steel. Adjustments are made by turning an Allen-head screw. The gas port can be completely shut off for single-shot operation or

tuned for optimal functioning with different loads or to throttle down when using a suppressor. (Using a suppressor increases system gas volume and pressure considerably. Too much gas increases wear and stresses parts unnecessarily.)

Both the upper and lower receivers are machined from 7075-T6 aluminum billets. Even though they are made as a matched set, the tight tolerances of the receivers allow you to swap uppers and lowers without compromising their fit.

I have often said that the heart and soul of an accurate rifle are the barrel

RHINO ARMS RA-5R V2 7.62MM



"...the three-chamber muzzle brake was very effective at reducing perceived recoil."



LEFT: The 18-inch barrel is finished in black nitride for added durability and a longer service life without diminishing accuracy. The three-chamber muzzle brake provides for faster follow-up shots. **RIGHT:** Magpul's seven-position-adjustable UBR stock offers the stability of a fixed stock with a consistent cheekweld in any position. Also note the storage compartment and rubber buttpad.

and bolt, while its brain is the trigger. The RA-5R V2's barrel blank is made and rifled by an outside precision barrelsmith, but the chambering, turning and fluting are done in-house by Rhino Arms. The RA-5R V2 uses a match-grade, 18-inch-long barrel made from chrome-moly-vanadium steel with patented, single-sided polygonal rifling. The barrel has a 1-in-10-inch twist rate, which is slightly faster than the standard 1-in-11-inch twist rate most common to the caliber and is optimal for bullets weighing 168 to 175 grains, according to the company. The barrel is fluted and un-tapered with a diameter of 0.936 inches to the gas block and 0.925 inches thereafter. The

muzzle has an 11-degree crown and 5/8x24 threading for using a suppressor. The RA-5R V2 comes with a three-chamber muzzle brake designed and made by Rhino Arms. All Rhino rifles are accurate out of the box. Breaking in the rifle doesn't require a tedious cleaning after each round, but firing 100 rounds is recommended on a new barrel.

The barrel is finished in black nitride. This finish is superior to chrome plating in several respects. The nitride finish is done inside and out. It is not a coating but instead is a metal treatment that penetrates the surface of the metal while keeping the dimensions unchanged and avoiding the potential for degrading

"...the carbon-fiber handguard... was very comfortable to hold and maneuver the rifle with..."

Rhino's 10- and 19-round magazines have a textured "Rhino Skin" finish that increases their traction and durability.

SPECIFICATIONS

RHINO ARMS RA-5R V2

CALIBER:	7.62mm NATO
BARREL:	18 inches
OA LENGTH:	38 inches
WEIGHT:	9.8 pounds (empty)
STOCK:	Magpul UBR
SIGHTS:	None
ACTION:	Direct impingement semi-auto
FINISH:	Matte black
CAPACITY:	19+1
MSRP:	\$3,015

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Atomic Ammo 168 JHP	2,499	1.50
Black Hills 175 Match JHP	2,522	0.65
Hornady 168 A-MAX	2,542	0.65
Winchester 147 FMJ	2,777	2.15

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.



accuracy from uneven plating or flaking of the chrome lining. Nitriding actually increases the hardness of the steel to a depth of 0.005 inches, while mil-spec chrome plating is typically only 0.0003 to 0.0005 inches thick.

The RA-5R V2 has a single-stage trigger that is designed and made entirely in-house from hardened tool steel and is nickel-boron coated for a smoother, less frictional let-off. My sample rifle's trigger weighed 3 pounds according to a Lyman electronic trigger pull scale. The trigger and hammer are secured with anti-walk pins, which is another quality detail.

Rhino Arms also makes its own buffer springs using chrome silicon steel, which the company explains makes the springs last 10 times longer and have less memory loss from use than ordinary spring steel. The bolt and bolt carrier are also designed and made by Rhino and finished with nickel-boron for added durability and lubricity for smooth functioning. This finish may look cool, but I like the fact that it cleans quicker than a traditional Parkerized finish, and you can easily see if you missed any spots.



The single-stage trigger is held in place with anti-walk pins, and the lower also features an Ergo grip with finger grooves.

The firing pin retainer is a milled pin that screws into place instead of the typical cotter pin retainer that is prone to bend and break under harsh use.

Buyers can select from two types of carbon-fiber handguards made in-house: octagonal or round. Both versions, including the octagonal handguard on my test rifle, have several points for mounting additional rails along with a full-length Picatinny top rail. Current-generation octagonal handguards feature KeyMod slots for greater compatibility with today's accessories without adding extra bulk.

One of the more unusual aspects of the RA-5R V2 is the extent to which the magazine has been improved for a better grip and corrosion resistance compared to the standard blued-steel variants supplied with most 7.62mm AR rifles. Finished in "Rhino Skin," these magazines are available in 19- or 10-round capacities. The Rhino Skin finish is actually stainless steel wire that is welded onto a bead-blasted, smooth-sided stainless magazine. The result is a uniquely textured finish that is very corrosion resistant and durable. Rhino Arms also



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ATN ThOR-640

■ By Andy Massimilian

Thermal imaging devices detect differences in infrared heat and are ideal for target detection and surveillance. Because the devices pick up infrared waves, suspects can be detected through smoke, fog, darkness/bright light and camouflage as long as there are sufficient temperature discrepancies between the target and its surroundings. Thermal imaging does not, however, work for detecting objects through glass, which blocks infrared light waves.

THE POWER OF THOR: The ATN ThOR-640 is not a telescopic scope in a traditional sense. Rather it is a digital video camera where the shooter sees an electronic display of the thermal images the unit detects downrange. The display

can be adjusted in ways scopes cannot, including changing the color and style of the reticle and of the downrange display. For instance, five types of reticles can be selected (red, green, black, white or blue), while the downrange display can be seen in black and white or full color. What color in the downrange display indicates a higher temperature can also be adjusted with white signifying a hot area and black signifying a cold area, or vice versa.

The ThOR-640 offers variable magnification from 5-40X. Magnification is adjusted via the control buttons atop the unit in increments of 5X, 10X, 20X and 40X. The unit mounts on a Picatinny rail with throw levers made by ARMS. The output resolution is 800x600 pixels and the core resolution is 640x512 pixels. For



detecting moving objects, the unit's frame rate is 30 Hz, which provides a fairly smooth video image playback. For documenting the mission or transmitting it in real time to a large monitor, the ThOR-640 thermal sight features a video output jack.

The ThOR-640 is waterproof to 3 meters for 30 minutes and has a warranty for three years on the entire unit and 10 years on the thermal sensor. The unit uses three CR123A batteries and has an eight-hour expected battery life. For more information, visit atncorp.com or call 800-910-2862.

offers buyers the choice of any of the four Magpul stocks made for 7.62mm ARs, and my sample had the Magpul UBR, a rugged, well-made tactical stock with several useful features.

Range Time

The RA-5R V2 proved to be a very accurate, reliable rifle that achieved the company's promise of 0.5-inch, three-shot groups at 100 yards, measured center to

center. The best three-shot group was 0.25 inches using the Hornady 168-grain A-MAX ammo followed by 0.5 inches for the Black Hills 175-grain JHPs. Shooting five shots widened the best group for these two loads to 0.63 inches. Rhino Arms' internal testing shows that Federal's 168-grain Gold Medal Match load also performs very well. The RA-5R V2 was comfortable to shoot, and the three-chamber muzzle brake was very effective at reducing perceived recoil. The

RA-5R V2 I tested came with the carbon-fiber handguard, which was very comfortable to hold and maneuver the rifle with.

The Rhino RA-5R V2 is a serious contender for those who seek a semi-auto with accuracy that matches a precision bolt-

action rifle's. What's more surprising is that the RA-5R V2 is dead-on accurate and weighs only 9.8 pounds. That will certainly get the attention of those who carry rifles afield.

Having been in the industry for decades, I have seen many companies release a product that had the potential to be a winner but did not live up to expectations or was plagued with problems because the research and development and new product testing was insufficient. The RA-5R V2 is not such a rifle. Instead, it is a testament to the experienced engineers and precision machinists at Rhino Arms who have managed to make a superbly accurate rifle as their very first. For more information, visit rhinoarms.com or call 855-257-4766. **SW**



The author's test RA-5R V2 rifle came with a long, octagonal, one-piece, carbon-fiber handguard surrounding the free-floating barrel and low-profile gas system that is both tough and lightweight. Operators can install 2- and 4-inch Picatinny rails where needed along its sides for mounting accessories like lights, lasers and other mission-critical devices. Also note the barrel's fluting, which contributes to the rifle's 9.8-pound weight.



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DISTINCT ADVANTAGE™

PORTUGAL'S SPEC-OPS WARRIORS

These elite units conduct covert missions to protect Portugal at home or abroad!

BY LEROY THOMPSON

Portuguese MDN Photos

Portugal is a relatively small country of 35,603 square miles and a population of about 10.4 million. However, in the past, Portugal had a large colonial empire that

required well-trained troops to maintain. Portugal is also a member of NATO.

Though the colonial empire is gone, some of the elite units formed for service in the colonies remain as important parts of the Portuguese armed forces.

The best known of these units is probably the Portuguese Army Commandos, which was originally formed in 1962 to perform special operations in Portuguese colonies. Army Commandos were best known for counterinsurgency operations in Africa. Portuguese Commandos proved very effective during the fighting in Mozambique and Angola, but after the end of the colonial conflicts, the Commandos were merged with the Portuguese airborne force.

However, the Commandos were reactivated in 2002 as an independent Commando Battalion with two Commando Companies and a Training Company. In 2005, Commandos were deployed to Afghanistan. An additional Commando Company was also authorized.

As with many elite units, Commando training emphasizes psychological as well as physical toughness, namely the ability to keep going despite hardships. Only about 20 percent of trainees pass the selection course. Once again, as with many elite training courses, the Commandos are kept unsure of what they will be required to do next. This is intended to develop their ability to quickly adjust to unforeseen circumstances in combat. Among the primary

Portugal's national counterterrorism unit, the *Grupo de Operacoes Especiais*, or GOE, is responsible for protecting VIPs and conducting raids on known criminals.



missions of the Commandos today are long-range surveillance and intelligence gathering, though they are also trained for direct-action missions and counterinsurgency. Commandos wear red berets.

Rapid Reaction Brigade

The Commandos are part of the Portuguese *Brigada de Reacao Rapida* (Rapid Reaction Brigade). Also part of this brigade are the Portuguese Airborne battalions, though they retain the designations of former regiments—the 3rd Cavalry Regiment (Recon), and 10th and 15th Parachute Infantry Regiments. The 15th Infantry Regiment is one of the oldest units in the Portuguese Army, having been established in 1641. The 15th Airborne Infantry acts as the cadre at the Portuguese Parachute Troops School. Prior to 1993, Portuguese paratroopers had been part of the Air Force and had seen a lot of action in colonial wars in Africa as Paratrooper Hunter Battalions. Since the current airborne forces are structured more as a heavier airborne force than when with the Air Force, the unit has added some specialist battalions incorporating an anti-tank company, a heavy mortar company, a services and support group, a field artillery group, an engineering company, an anti-aircraft artillery battery and a helicopter support group. There is also a War Dogs Center and a Pathfinder Company. Paratroopers wear green berets.

The Pathfinder Company is considered an elite within the parachute forces. In addition to carrying out reconnaissance of landing zones, the Pathfinders can also set up combat air control in forward locations. Though not their primary mission, the Pathfinders are also trained to carry out limited direct-action or recon missions.

Also part of the Rapid Reaction Brigade are members of the Portuguese

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SMOOTH OPERATOR

The SBC is a revolutionary, adjustable bolt carrier for direct gas impingement AR rifles. Available in 5.56 for AR-15 and DPMS/SR-25 pattern 7.62 AR rifles. It will increase the reliability of a suppressed weapon and allow the shooter to choose between a suppressed and un-suppressed setting.

NEW



GEMTECH

SUPPRESSED BOLT CARRIERS



Portuguese Marines train with many allied counterparts, including U.S. Marines. Here a Portuguese Marine boards a ship with an Uzi submachine gun.



Portugal's special operations personnel, including those from the DAE and CTOE, have many weapons at their disposal, including the 9mm HK MP5 submachine gun (left) and the 5.56mm Sig SG543 (right).

CTOE (Special Operations Troop Center). The CTOE has the mission of training Portuguese troops in counterterrorism and unconventional warfare. Part of the CTOE is a special operations unit designated the DOE, which has the missions of long-range recon, raids against enemy command and control, destruction of enemy air defenses and radar stations, and prisoner-recovery missions. The DOE is trained for airborne, heliborne, small boat and other types of insertions. The unit is often equated with the U.S. Army Rangers. Elements of the CTOE have been deployed to Bosnia, East Timor, Kosovo, Afghanistan and Iraq. Among specialized training offered by the CTOE are sniping, psychological warfare,

mountaineering and various others. Members of the CTOE can also attend other courses, including combat diving, forward air controller, combat medic, combat communications, demolitions, NBC (nuclear, biological and chemical), intelligence gathering, static line and free-fall parachuting, and small boat handling. Members of the CTOE also attend foreign courses in the U.S., UK, Germany, Spain, Norway and Brazil. These include the German LRRP School, Norwegian cold weather training and Brazilian jungle warfare training.

Navy & Airborne

Within the Portuguese Navy is a small special warfare unit—the DAE (*Destaca-*

mento de Acoes Especiais). Its missions include beach recon, combat search and rescue (CSAR), maritime anti-terrorism (MAT), demolitions against enemy ships and installations, raids across the beach, and other special operations. Those undergoing selection for the DAE first complete combat diving and underwater demolition training. After successful completion of that phase, they receive training in escape and evasion, high-speed driving, mountaineering, small-unit tactics and parachuting. They also learn English if they do not already speak it. The unit has a strength of approximately 60 and comprises a command unit along with four 10-man combat teams. Among units with which the DAE trains are the



AFRICAN COLONIAL WARS

When the Portuguese Commandos were formed in 1962, their primary mission was counterinsurgency warfare in Portugal's African colonies. Actually, Portugal did not view their African possessions as colonies but as overseas provinces, as France did with Algeria. This hardened the resolve to retain the African "provinces." Commandos were trained in counter-guerrilla warfare and first deployed in Northern Angola (Zambia). Early units that would become Commandos were designated *Cacadores Especiais* (Special Hunters). So successful were the Commandos (though they were not officially given this designation until 1963/1964 when additional units

were formed) that in 1964, additional Commando units were trained in Mozambique and Guinea-Bissau. Native Africans served in their own Commando units—the *Comandos Africanos*.

The Commandos were very successful, achieving the highest kill rate of guerrilla fighters, but they also suffered casualty rates 10 times greater than other Portuguese troops deployed, with 357 killed, 28 missing and 771 wounded. In the 67 Commando companies formed and trained, more than 9,000 served.

Among the more important operations in which the Commandos played a part was Operation Gordian Knot in July/August 1970, designed to cut guerrilla

“Though the colonial empire is gone, some of the elite units formed for service in the colonies remain as important parts of the Portuguese armed forces.”

U.S. Navy DEVGRU, British SBS, French Commandos Marine, Spanish UOE and Brazilian GRUMEC. The DAE unit has been deployed to Angola, Zaire, Guinea-Bissau, the Democratic Republic of the Congo and Somalia.

Though airborne forces are no longer part of the Portuguese Air Force, the Air Force does retain a small special operations unit—the UPF (*Unidade de Protecção da Força*). Its missions include protection of Portuguese air bases, VIP protection and CSAR. For the latter mission, members of the UPF have trained with U.S. Air Force Pararescuemen.

More Elite Units

The Portuguese Marines, the *Corpo de Fuzileiros*, have a long and distinguished history as an elite unit; the unit can trace its history to 1618. The *Fuzileiros* have the missions of amphibious warfare, coastal reconnaissance and raiding, guerrilla and unconventional warfare, maritime interdiction and combat boarding. In most countries the training of Marines is rigorous, but that of the *Fuzileiros* is among the world's toughest, lasting 42 weeks

infiltration routes from Tanzania and destroy major guerrilla bases. To give the elite Commando and Hunter units more firepower against guerillas armed with the SKS or AK-47, the HK G3 rifle was adopted in 1961. However, some of the units preferred the FN FAL or the Armalite AR-10.

The wars in Africa ended after members of the Portuguese armed forces carried out a military coup in April 1974. At least some former Portuguese Commandos continued to fight in Africa as mercenaries. Today's Portuguese Commandos continue to be trained in counter-insurgency warfare, thus retaining their original mission and honoring their African heritage.

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with an average of only 25 percent completing the training and earning the dark blue beret. They march long distances, complete tough obstacle courses, learn to rappel and free climb, train with small boats and learn demolitions. They also spend a lot of time training for close-combat situations with weapons, blades and hand-to-hand. The *Fuzileiros* consist of two Marine Battalions as well as a Fire Support Company, a Transport Support Company and a Naval Police Unit. The DAE special operations unit is considered part of the Marine Corps. Among units with which the *Fuzileiros* train



A Portuguese special operator takes aim with an Italian-made Franchi SPAS-15 dual-action, 12-gauge shotgun.

are the U.S. Marine Corps and the British Royal Marines.

One other unit that should be mentioned is Portugal's national counterterrorist unit—the GOE (*Grupo de Operacoes Especiais*). Part of the Public Security Police, the GOE has principal responsibility for counterterrorist operations within Portugal and is also deployed for VIP protection, including motorcades and VIP countersniper missions, as well as raids on dangerous criminal organizations.

The GOE is organized into a command element, a support unit, three Intervention Operational Groups, each with a strength of 20 to 25 operators, and one Technical Operational Group responsible for training, explosive ordnance disposal, working dogs and use of technical surveillance devices.



FN Minimi MK3



HK MP5

Sig Sauer P226



HK416

Guns & Gear

As can be expected with so many units, a diverse group of weapons are used. The mostly widely used rifle is the HK G36, in "K," "KE" and "C" configurations. Other rifles that have seen some use are the HK G3 and HK416 (5.56mm)/HK417 (7.62mm), and the Sig SG543. Portuguese Marines have used M4 Carbines with M203 grenade launchers. Among the sniper rifles used by the various units are the 5.56mm Sig SG550 Sniper, the 7.62mm HK PSG1/MSG90A1, Accuracy International AW rifles in .338 Lapua, 7.62mm and .50 BMG, and the .50-caliber Barrett M82 and M95.

Principal submachine guns include the HK MP5 and MP5SD, the FN P90, the HK UMP and the Uzi. Shotguns include the Franchi SPAS-12 and SPAS-15, the Benelli M3 and M4, the Remington 870 and the Mossberg 590. Primary handguns used include the Sig Sauer P226, P228 and P2022, the Glock 17 and Glock 19, and the HK USP. Heavier weapons include the 5.56mm FN Minimi, the 7.62mm HK21E, the 7.62mm Rheinmetall M3 and the 5.56mm HK MG4.

As a long-standing member of NATO and a country with a proud military tradition, Portugal has retained an array of units that can carry out special missions at home or abroad. Portugal has also developed close military ties with other nations that allow its special operations units to get world-class training. Portugal's spec-ops warriors stand ready to serve and defend. **SW**

FN P90

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CMMG's Mk47 Mutant AKM offers an excellent combination of AR ergonomics, AK-47 reliability and 7.62x39mm power. Shown with a U.S. Optics SR-4C scope.

Combining the AK and AR platforms has been a lifelong goal for many rifle builders. Arguably the two most prolific carbine platforms, they each have their respective strengths and weaknesses. While purists on either side see any mating of the AK and AR as almost blasphemous, many in the middle have been clamoring for a hybrid for years. The resulting attempts have employed

various design approaches. ARs using modified gas systems resembling the AK have had success, along with purpose-built uppers. There are also AKs made to look and operate like an AR that meet some needs, but no one has really solved all of the issues that arise in terms of accuracy and reliability. Depending on one's perspective, there have been many failures and some successes, but the quest continues.

The AK-47's strengths lie in its rugged reliability in

most conditions and its proven, easy-to-obtain 7.62x39mm chambering. However, some don't like the platform's ergonomics, and its accuracy ranges from acceptable to dismal. Simply

put, super-accurate AKs are rare. The AR platform's strengths include good accuracy and ergonomics, and infinite customization options. While the 7.62x39mm will work in some AR uppers, magazines have always been problematic. They can be unreliable, hard to find and expensive. The current solution has been to create an AR chambered in 7.62x39mm that will accept standard AK magazines. A few attempts have been made with varying degrees of success. There

CMMG MK47 MUTANT AKM

**BREAK AWAY
FROM THE PACK
WITH THIS
7.62x39MM
AK/AR HYBRID!**

**BY DAVID BAHDE
PHOTOS COURTESY CMMG**

**“Even with the 16.1-inch barrel,
the rifle is light, well balanced
and comfortable to shoot. Adding lights
or other accessories would be simple.”**

was room for a new take on this concept, and it looks like CMMG has done just that with its new Mk47 Mutant AKM chambered for the 7.62x39mm.

Gun Details

Past attempts at creating an AR/AK hybrid have generally started with a 5.56mm-based AR and bolt carrier group. With the Mk47 Mutant AKM, CMMG decided to start with a .308 bolt carrier group and build from there, resulting in a refreshing take on the process.

The larger bolt is stronger and more reliable—it's much better suited to the 7.62x39mm cartridge. The upper and lower receivers are machined from a billet



CMMG based the Mk47 Mutant AKM's bolt carrier group off of a larger .308 AR's for significantly more strength and reliability. Note the Mk47's larger bolt face (above left).



1. The 16.1-inch, medium-taper barrel features 5/8x24 threading, and CMMG installs a highly effective SV muzzle brake to help reduce muzzle rise.

2. The Mk47 has several ergonomic AR-pattern features, including its trigger, safety and Magpul MOE pistol grip. The paddle-style magazine release, just in front of the triggerguard, makes it easy to reload quickly.

of 7075-T6 aluminum, which keeps things strong yet lightweight. The upper has an integral top Picatinny rail, a standard ejection port with a dust cover, and a purpose-built brass deflector without a forward assist. The upper also features a standard AR-style charging handle.

The Mutant's 16.1-inch, medium-taper, free-floating barrel has a 1-in-10-inch twist rate. It also sports 5/8x24 threading so operators can use several different muzzle devices, including sound suppressors. My test rifle came equipped with CMMG's SV muzzle brake. The "T" model comes with an A2-style flash suppressor. Surrounding the barrel is CMMG's 15-inch-long RKM KeyMod handguard, which has several lightening cuts, a long Picatinny top rail that mates up with that of the upper, and KeyMod rails in the 3, 6 and 9 o'clock positions.

The lower receiver is designed to accept standard AK-47 magazines, including drum models. The steel-reinforced mag well is slim and trim yet sturdy, helping to keep the rifle's weight right at 7.2 pounds unloaded. A large ambidextrous paddle, just forward of the triggerguard, keeps magazines locked in place. It can be easily accessed using your thumb or index finger when necessary. Built from aluminum, the magazine release is strong enough for hard and fast reloads.

The controls are standard AR, with one of CMMG's single-stage triggers. The enhanced Mk47 Mutant AKM2 model comes with a Geissele SSA two-stage trigger. While a standard safety is equipped, users can also add an ambidextrous version. The lower also features Magpul's MOE pistol grip and CTR buttstock. Each rifle comes with one Magpul 30-round AK/AKM magazine.

To keep things light and simple, I added the new, slimmed-down Aimpoint Micro T-2 sight to the Mk47 Mutant AKM for testing. In essence, this is a redesign of the Micro T-1 with a new housing and lenses. To measure the rifle's accuracy, I added an Aimpoint 3X magnifier.

One of the biggest advantages of the 7.62x39mm is its ability to be suppressed. Unfortunately, adding a suppressor to an AK-47 is an adventure. Given their lack of precision when it comes to threading, it can be an expensive experiment. CMMG's Mk47 Mutant does not suffer that malady, however, so I used two suppressors to test its capabilities. SilencerCo's Saker 762 is one of the most popular out there. It's easy to attach and is highly effective. SilencerCo's Trifecta flash suppressor/adaptor is also excellent, with no annoying "ping" when used on its own. The Saker attaches solidly without producing much shift in the point of impact.

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“Being able to use AK magazines is fantastic if they work, and the Mk47 Mutant AKM came through with flying colors in this regard.”



For those in need of less sound suppression with its commensurate drop in backpressure, the SureFire SOCOM762-Mini is an excellent choice. It does a great job of reducing the flash while directing all of the concussive effect forward. It is short, lightweight and produces less backpressure than most while maintaining reliability and directing less gas toward your face.

Range Time

My first concern at the range was reliability. Being able to use AK magazines is fantastic if they work, and the Mk47 Mutant AKM came through with flying colors in this regard. Over the course of running close to 800 rounds of all kinds of ammunition, it only failed to extract once.

This occurred after several hundred rounds, during a rapid, three-magazine run with a suppressor in place. I cleared the rifle and it never missed a beat again.

I ran the gun with every magazine I had in my shop, including PMAGs, Polish steel mags, those from U.S. Palm, Bulgarian Circle 10 mags and a few other metal magazines whose origin is completely unknown. All of them fit well, although the Circle 10 magazines were tight. They worked great, but you have to make sure they are

CMMG designed the Mk47 Mutant AKM for top-notch reliability. During testing, the rifle kept on running while using several types of polymer and metal AK-style magazines as well as sound suppressors.

seated properly before rocking them into place. I completed the bulk of the testing with PMAGs, as I had several in-house. Feeding and loading was smooth with both steel- and brass-cased ammunition. While I didn't drop the rifle from a cliff or do pushups on the magazine, I didn't baby it, either. In the end, all of the magazines worked well and didn't work loose during firing.

The Mk47 Mutant AKM was very easy to use after I ran a few magazines through it to work it in. Even with the 16.1-inch barrel, the rifle is light, very handy, well balanced and comfortable to shoot. Adding lights or other accessories would be simple. And aside from the magazine changes and lack of a bold-hold-open feature, it also shot just like an AR. Of course, since every magazine change requires you to run the charging handle, an extended version would be nice. Whether using your palm or grabbing the handle, it would be easier with an extended paddle, or an ambidextrous model would be even better. Since the charging handle is a different length, you would need to swap out the lever, but that is pretty simple. The rifle ran flawlessly with both suppressors. The rifle's accuracy was good, with my best group measuring 0.8 inches using DoubleTap's 123-grain Rifle Defense ammo. This ammunition might as well be handloaded considering how consis-



SPECIFICATIONS

CMMG MK47 MUTANT AKM

CALIBER:	7.62x39mm
BARREL:	16.1 inches
OA LENGTH:	33.5 inches
WEIGHT:	7.2 pounds (empty)
STOCK:	Magpul CTR
SIGHTS:	None
ACTION:	Direct impingement semi-auto
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$1,650

PERFORMANCE

LOAD	VELOCITY	ACCURACY
DoubleTap 123 Rifle Defense	2,380	0.80
DoubleTap 123 TSX	2,315	1.25
Hornady 123 V-MAX	2,340	1.30
Red Army 123 FMJ	2,400	1.48
Wolf Military Classic 124 FMJ	2,580	1.50

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.

tent and accurate it is. Everything else hovered between 1 and 1.5 inches. Given a scope and a precision trigger, you may get even better results. Since it is an AR barrel, the possibilities are endless, but the Mk47 Mutant was plenty accurate.

Final Notes

The recoil was manageable—about what you expect with this chambering. Adding a suppressor made it soft-shooting and quiet. Having concentric barrel threads makes suppressor use all the more possible without risking baffle strikes. I only fired the Mk47 Mutant AKM with two suppressors, but I mounted and checked some more thread-on units and they all lined up just fine.

Purists might not like the Mutant, but those who just want an AR that uses AK magazines should be plenty happy. This is the best attempt at this type of conversion that I've seen to date. This rifle worked with several magazines and different ammunition, and did so with excellent accuracy. Doing so while maintaining its looks, light weight and AR-style ergonomics makes it all the better. For more information, visit cmmginc.com or call 660-248-2293. **SW**

AIMPOINT MICRO T-2

■ By David Bahde

Aimpoint is a premier builder of combat-ready red-dot sights suitable for the harshest combat conditions. The company's red dots sit atop many rifles in both the military and law enforcement worlds. Long known for rugged reliability, long run times and solid repeatability, they are a favorite of many. When the Micro T-1 was originally introduced, it quickly became a favorite micro red-dot sight for just about any use. Now Aimpoint has released the Micro T-2.

Aimpoint started by giving the Micro T-2 new lenses with coatings for maximum clarity and light transmission. The new housing offers better protection for the adjustment knobs and comes with see-through, flip-up lens covers. The Micro T-2 also has a 50,000-hour run



time with the 2-MOA dot set between the eighth and 12th brightness settings. In short, this is simply an amazing little sight that builds upon the T-1's rugged legacy.

DUTY READY: I recently tested the Micro T-2 on the CMMG Mk47 Mutant AKM to see just how clear the lenses were. The target image was clearer than ever, and the flip-up lens covers were usable and easy to access. The sight adjusts the same as the T-1, but the housing protects the adjustments a little better. I was very impressed. If you are looking for a new micro red-dot sight as your primary or secondary targeting system, then take a close look at the new Micro T-2 from Aimpoint. This sight is just about as good as it gets! For more information, visit aimpoint.com or call 877-246-7646.

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BATTLE RIFLE COMPANY

BR4 SPECTRE

5.56mm

**TANK-TOUGH AR
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AND KEEP ON
RUNNING!**

BY JAY LANGSTON

PHOTOS BY SEAN UTLEY

With its custom-grade features, the 5.56mm BR4 Spectre carbine from Battle Rifle Company offers the unshakeable reliability today's operators require. Shown with a Burris AR-536 red-dot sight.

The Battle Rifle Company BR4 Spectre was built to take a beating. "It is the rifle used by Vertex Aviation from its helicopters for aerial hog hunting," company owner Chris Kurzadkowski said. It is common for an AR deployed for chopper-hog operations to blast through tens of thousands of rounds in a season, so the BR4 Spectre is a logical choice for those who want a 5.56mm with some hardness.

Battle Rifle's BR4 Spectre is a heavy-duty rifle. The Spectre uses an 11-inch, free-floating, quad-rail

handguard and can be fitted with either 14.5- or 16-inch barrels. The cryogenically treated barrel features a 5.56mm NATO chamber and a right-hand, 1-in-7-inch twist rate. The barrel also sports 1/2x28 threading and comes equipped with a Battle Rifle flash suppressor. Barrels can come with SOCOM or HBAR profiles. The barrel and extension are phosphate coated. A staked micro gas block vents the gas to run the direct-impingement action. The barrel and chamber are chrome lined, and the rifle also features M4 feed ramps.

The BR4 Spectre's matched upper and lower receivers are made from



7075-T6 aircraft-grade aluminum that has been hardcoat anodized per mil-spec standards. The upper receiver's top rail mates with the 12-inch hand-guard's for plenty of optics-mounting space, and the rifle comes with flip-up front and rear backup sights. The buffer tube is made of extruded 7075-T6 aluminum, and the buffer spring is coated for smoother operation. The castle nut is properly staked. This weapon uses a standard carbine buffer.

The trigger is a standard mil-spec unit, but it is polished and adjusted for a 6.5-pound pull weight. The M16 carrier is made to mil-spec standards

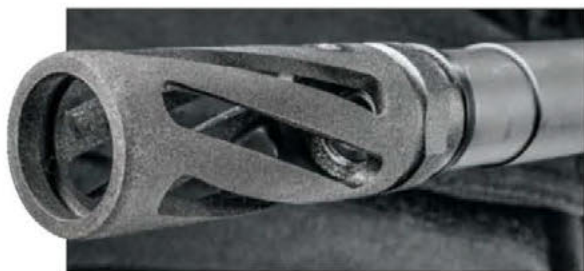
"I put more than 400 rounds through the BR4 Spectre without a malfunction."

with a chrome-lined gas key, which is hardened and attached with Grade 8 hardened fasteners. The bolt carrier is properly staked in accordance with mil-spec requirements. The bolt carrier assembly, machined from Carpenter 158 steel, is magnetic-particle (MP) and high-pressure (HP) tested.

Among the other accessories that outfit this rifle are an Ergo pistol grip, a Hogue adjustable buttstock and a padded buttpad. A single-point sling adapter is mounted at the rear of the receiver, just above where the web of the trigger hand grips the weapon.



The lower receiver (left) is fitted with standard AR controls, a polished trigger, an enlarged triggerguard and an Ergo pistol grip (above). Note the safety selector's "SAFE" and "FIRE" markings, which are present on both sides of the receiver.



Battle Rifle Company's unique flash suppressor caps the threaded, 16-inch-long, 1-in-7-inch-twist barrel.



The free-floating, quad-rail handguard offers plenty of space for mounting mission-critical accessories.

BRAVO'S Gunfighter Light Mounts

■ By Michael O. Humphries

New from Bravo Company Manufacturing (BCM) is the Gunfighter series of light mounts for KeyMod platforms. Delivering fully ambidextrous usage, these light mounts are machined from solid billet aluminum with a low-profile and snag-free design.

The mounts are engineered to mount flush or cantilevered off either the left or right side of a rail system. They're compatible with most common 1913 rail systems and are offered in three primary configurations.

The Scout KeyMod Modular Light Mount is designed for use with SureFire's Scout and Mini Scout lights and is optimized to interface with a KeyMod rail system at the 3 or 9 o'clock rail positions and run the light in the offset position. The 1913 KeyMod Modular Light Mount is optimized to interface with a KeyMod rail system at the 3 or 9 o'clock rail positions, and it offers both high and low mounting positions. The One Inch Modular KeyMod Light Mount is designed to interface with the majority of popular 1-inch round-body tactical light systems and can be mounted in standard and offset positions. For more

information, visit bravocompanyusa.com or call 877-272-8626.



Bravo's Scout KeyMod Modular Light Mount

"SAFE" and "SEMI" markings are also present on both sides, another nice touch.

Kurzakowski is extremely proud of his company's products. "You will not find a better rifle built with quality components, providing the best performance at a better value than with Battle Rifle Company," Kurzakowski said. "You can be assured of us using the best components and the best practices with each rifle we build. Quality, performance, value—Battle Rifle Company rifles are built with all these things in mind—and show it with every pull of the trigger."

Kurzakowski was in the U.S. Army from 1974 to 1994, first in enlisted ranks and later becoming an officer. He said, "I was on the rifle team for a while and worked as a sniper in Korea and security in the DMZ. I was also in the test battalion, Testing and Combat Experimental Command. We tested all of that gear that wound up being used in Desert Storm."

When asked about what prompted him to enter the AR business, he said, "My first rifle in the military was an M16 without a forward assist and built by a washing machine company: Westinghouse. My son went to SWAT school, and he knew my background as an armorer and sniper in the Army, so he asked me to build him a rifle. From there, others at the school

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BATTLE RIFLE COMPANY BR4 SPECTRE



The author's test BR4 Spectre came with an adjustable Hogue buttstock that offers several sling-mounting points.



Battle Rifle Company equips the BR4 Spectre with a set of Magpul MBUS flip-up front (above) and rear sights. The 7075-T6 aluminum lower is designed to work with both steel and polymer magazines, like those from Hexmag (left).

liked it and asked me to build more. I can't dance and I can't sing, so I might as well build ARs, and after all those years and all that money that Uncle Sam spent to train me, why not use some of those skills? I'm not trying to compete with anybody; we're just trying to build a good gun. When someone takes the time to shoot one of mine, they can see that a lot of care and love go into building it. It's a passion.

"The Spectre is the heaviest build of any of our ARs," Kurzadkowski said of the BR4. "It is the same gun that's being used in the aerial platform that Vertex is using in its hog-hunting platform. I built four guns for Vertex, and they put at least a quarter-million rounds through them and they're still running. The cryogenic barrel treatment helps get to 50,000 or 60,000 rounds before rounds start keyholing.

"We recently switched from 10- to 11-inch handguards for additional accessory mounting," he added. "The trigger is mil-spec, but we've cleaned it up a little bit," Kurzadkowski added. "The pull weight is taken from 9 pounds down to about 7 pounds. We polish the face, set the spring to minimize the creep. We also offer a two-stage trigger package."

Battle Rifle Company is in the process of reworking its fire control groups on future rifles. By the time this issue hits the shelves, the trigger packages should include new spring configurations, more polishing, and the hammer and trigger will be nickel-boron treated.

Range Testing

At the range, I used two optics to put the BR4 Spectre through its paces. To shoot precise five-shot groups at 100

SPECIFICATIONS

BATTLE RIFLE COMPANY BR4 SPECTRE

CALIBER:	5.56mm NATO
BARREL:	16 inches
OA LENGTH:	32.5-36.25 inches
WEIGHT:	6.2 pounds (empty)
STOCK:	Collapsible
SIGHTS:	Magpul MBUS
ACTION:	Direct impingement semi-auto
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$1,495

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Black Hills 75 Match HP	2,544	2.01
Federal Premium 60 NP	2,722	1.42
Hornady 55 Z-MAX	2,891	1.65
Hornady 60 TAP	2,762	1.21
Hornady 75 Match	2,826	2.12

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.



During testing, the BR4 Spectre was light on recoil and ran flawlessly with every ammunition type it was fed.

Champion MSR Tactical Bipod

■ By Michael O. Humphries

Need an immediate means to stabilize your modern sporting rifle (MSR), one that is lightweight and simple to deploy? Then take a look at the new MSR Tactical Bipod from Champion. Constructed of lightweight polymer, the bipod attaches to a Picatinny rail (through its integrated aluminum rail mount) and provides quick height adjustment from 7 to 10 inches and textured feet for secure gripping. A pivot action allows it to adapt quickly to uneven terrain. For more information, visit championtarget.com or call 800-379-1732.



yards, I chose a 7-21X Bushnell Elite 3200 scope. When I switched over to shoot steel reactive targets, I used a Trijicon ACOG. At a minimum, I fired three 5-shot groups for each load. I put more than 400 rounds through the BR4 Spectre without a malfunction.

The tightest group with Federal's 60-grain Nosler Partition ammo measured 1.42 inches. The average velocity was clocked at 2,722 fps, with the standard deviation measuring 11 fps and the extreme spread 33 fps. Hornady's 60-grain TAP ammunition created a best five-shot group of 1.21 inches, and the average velocity was 2,762 fps.

The smallest group for Hornady's 55-grain Z-MAX ammo measured 1.65 inches. The average velocity was 2,891 fps and the standard deviation was 38 fps, while the extreme spread was 92 fps. Hornady's 75-grain Superformance Match ammunition is hot. The average velocity was 2,826 fps, and its smallest group measured 2.12 inches.

Black Hills' 75-grain Match HP load produced a 2.01-inch group. The average velocity was measured at 2,544 fps, and the standard deviation was 30 fps. The extreme spread was 82 fps.

Whether you're a weekend shooter, a tough plinker or a professional operator preparing for work, Battle Rifle Company's BR4 Spectre 5.56mm NATO carbine will certainly fit your needs. For more information, visit battleriflecompany.com or call 281-777-0316. **SW**



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This rendering of the yet-to-be-produced SB-1 Defiant JMR compound helicopter shows its coaxial main rotor and pusher prop.



SIKORSKY'S SB-1 DEFIANT

Compound helo built to tackle tomorrow's battles with speed, power and versatility!

BY JACK SATTERFIELD

Helicopters offer a lot of benefits when it comes to powered flight. Their operational advantages—the ability to take off and land vertically, or nearly so, and hover in static position while in flight—make rotorcraft essential platforms for civilian and military operators. However, these capabilities come at a cost. Conventionally configured helicopters, with a main rotor overhead and a tail rotor to counter the torque effect of the main rotor, have apparently long since reached their absolute performance limits. They are costly to procure and operate. Operationally, they are far slower, with far less range, than comparably powered fixed-wing aircraft. The implications of these limits, particularly for military users that must coordinate combined operations with airplanes, have pushed armed forces to develop

some truly innovative solutions that can expand rotary-wing performance.

Several approaches to enhance helicopter effectiveness have been explored over the years, and the U.S. Army is now preparing to evaluate two very different designs that increase helicopter range and speed while retaining hover and vertical takeoff and landing (VTOL) capabilities.

Competing designs for the U.S. Army's new Joint Multi-Role (JMR) helicopter program are the SB-1 Defiant, a coaxial rotorcraft with a pusher prop, commonly referred to as a compound helicopter, produced by a consortium involving Sikorsky Aircraft and Boeing, and the Bell Helicopter V-280, a third-generation tilt-rotor aircraft similar to but smaller than the U.S. Marine Corps' V-22 Osprey. Both designs are scheduled for evaluation after the completion of concept demonstrators in late 2017.

Because Ospreys have been in operational service since 2005, following about 20 years of design and development, tilt-rotor capabilities—taking off vertically, converting to a turbo-prop aircraft for flight, then switching back to helicopter mode for landing—are well documented. The new Defiant design, while derived from other test aircraft, has not been adopted in the past, and its design warrants some exploration.

Compound & Coaxial

The Defiant's compound concept has many indirect predecessors. The British Fairey Rotodyne first flew in 1957. It was really a turboprop airliner capable of carrying up to 75 passengers. Its large main rotor, powered by bleed air from its two wing-mounted turboprop engines, permitted vertical takeoffs, landings and hovers. In flight, the aircraft performed as an airplane. But its high cost and lack of orders ended the program in 1962. Lockheed's AH-56 Cheyenne added a tail-mounted pusher prop to its conventional attack helicopter program competitor that increased its speed to nearly 250 mph, but the design lost to the AH-64 Apache.

Coaxial rotors also have a long history, most notably at the Kamov Design

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Bureau in Russia, which has produced at least 10 military types. The primary advantage of coaxial counter-rotating rotors is the cancellation of torque, eliminating the need for tail rotors. In addition, the design eliminates dissymmetry of lift, increases the payload and improves control in flight. The rotor system is, however, complex and expensive. Mainstream manufacturers have not embraced these technologies, but Sikorsky broke the mold with the S-69 Advancing Blade Concept demonstrator in the early 1970s and the more recent X2 high-speed demonstrator, which reached 290 mph in level flight in 2010. The S-97 Raider high-speed scout and attack compound helicopter developmental prototype, now in production at Sikorsky, utilizes many of the same design features and is aimed at the currently unfunded lightweight-class JMR competition.

Boeing, with experience in both tandem-rotor heavy lift (CH-47 Chinook) and attack (AH-64 Apache) arenas, has partnered with Sikorsky on the medium-

weight-class JMR. The companies combined in the past to produce the high-tech RAH-66 Comanche armed reconnaissance helicopter, a successful rotorcraft that the Army nevertheless cancelled in 2004 because of budget constraints. A heavy-lift JMR category is also planned but not currently funded.

Defiant Capabilities

In a recent telephone interview, Doug Shidler, the Sikorsky Defiant program director, and Pat Donnelly, the Boeing SB-1 program director, described the new design and its capabilities. Precise technical specifications of the production design are, of course, undefined.

"The Defiant technology demonstrator will soon begin construction," Shidler said. "We expect to begin flying in 2017. Our design follows the X2. We've proven the physics of that technology, and we're applying it to the S-97 Raider. Sikorsky Boeing is leveraging off that approach to produce the Defiant."

"A virtual firewall separates the SB-1 team from the S-97 Raider," added Donnelly, "but we're able to use that program's experience to reduce risk, and cost, in SB-1 development."

For comparison, the S-97 Raider weighs approximately 11,000 pounds, and the Defiant will tip the scales at about 30,000 pounds, substantially heavier than the 22,000-pound Black Hawk it is intended to replace.

"The Defiant's size is derived from the government's requirements," Shidler noted. "The Army wants the helicopter to carry 12 combat-loaded troops, each weighing about 335 pounds, at 230 knots, with an operational range of 424 kilometers and the ability to handle high-hot conditions at 95 degrees Fahrenheit and at an altitude of 6,000 feet above sea level. The customer's inputs drive design, and it's worth noting that our offering meets those requirements and exceeds the stated air speed."

The SB-1 Defiant's configuration also addresses low-speed maneuverability, a critical factor when flying into or out of landing zones. "Our survivability is equal to or better than the Black Hawk, in large part because of the control benefits of the counter-rotating main rotors," Donnelly commented. "Even if the SB-1 Defiant loses the pusher propeller on its tail, the rotorcraft will still fly well with full command authority, able to move at speeds of 150 to 160 knots, equivalent to a conventional helicopter."

The pusher prop also provides advantages, Donnelly added. "The platform has great agility, with a high rate of climb and twice the speed of a conventional helicopter. The Defiant can hover nose down or nose up, at plus or minus 20 degrees, enabling the flight crew to maintain an excellent sight picture while approaching or leaving a landing zone, unlike conventional helicopters. In addition, attitude control means flight patterns in ascent or descent can be steeper and more compact, reducing vulnerability to adversaries on the ground. Finally, if the crew disengages the prop on approach to landing, the Defiant's acoustic signature is about half that of a conventional rotorcraft. These are capabilities that enable pilots to come in fast, slow or quiet when needed."

The attack version of the design is not finalized, so it remains to be seen if it will carry externally mounted or retractable weapon stores.

The Defiant is now in its detailed design phase. No suppliers have been announced as of November 2014. Production will take place at Sikorsky's flight test facility in West Palm Beach, Florida, for the single-technology demonstrator.



The goal of the Joint Multi-Role (JMR) program is to replace several aging helicopters in service, including the Sikorsky H-60 Black Hawk.

"The Army wants the helicopter to carry 12 combat-loaded troops, each weighing about 335 pounds, at 230 knots, with an operational range of 424 kilometers..."

Boeing and Sikorsky have teamed up for prior projects, such as the RAH-66 Comanche armed reconnaissance helicopter.





ABOVE: A mockup of Sikorsky's S-97 Raider, which shares some design characteristics with the SB-1 Defiant, sits on a flight ramp.

RIGHT: In 2010, the Sikorsky X2, a concept demonstrator and precursor of the SB-1 Defiant, flew at a speed of 290 miles per hour in level flight.



The contract will fund flight tests and evaluations from 2017 until 2019 and assess the demonstrator's key performance parameters. The flying article will use basic current avionics systems. "The Army is following a parallel path for future avionics architecture, but the programs are separate," Shidler explained. "At the same time, the Sikorsky Boeing team will design and develop tools used in production to reduce risk, enabling the program to move ahead quickly if the Defiant is selected as the JMR."

As for costs, it's too early to tell. "The government program is focused on concept development for now," Donnelly said. "We're going to help them field a platform that is far more capable, but acquisition and operational and support cost targets are all TBD."

Next-Gen Helos

According to Shidler, "The Army has a stated objective of replacing the UH-60 Black Hawk and the AH-64 Apache, the service's utility and attack helicopters, respectively. The analysis of alternatives in 2017 will be the kickoff for this process. We know the missions of both these rotorcraft completely because Sikorsky builds the Black Hawk and Boeing builds the Apache. Obviously, we want to be involved in producing future rotorcraft."

"The entire program will only be successful if the Department of Defense is able to show that the proposed replacement rotorcraft designs are more efficient than the Black Hawk and Apache fleets in terms of performance and cost," Donnelly added. "Our job is to support the government and enable our military customers to understand the art of the possible."

Both program managers emphasize that the current effort is just the start of a future effort that will take many years. "The program doesn't become real until we hit a milestone that triggers production," Donnelly said. The government has told us that they expect to complete the analysis of alternatives in 2019 or 2020, using the technology demonstrator that we're ready to manufacture."

"The competition will start all over again once the analysis of alternatives is complete," Shidler concluded. "There will be no guarantee that the Department of Defense will select one of the two designs currently underway; another company could join the competition at that point."

Based on past experience, however, it seems likely that the next generation of military rotorcraft will follow one of two revolutionary paths that will take the military's rotary-wing operations to unprecedented levels of performance. For more information, visit sikorsky.com or call 800-946-4337. **SW**

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INLAND M1 CARBINE



**The Allies' battle-proven
.30 Carbine returns
for frontline combat!**

BY WILLIAM BELL

Photos Courtesy Inland



Inland Manufacturing's M1 1944 and 1945 replicas (shown) look and operate just like those made in the last years of the war.

WWORLD WAR II was a significant and transformative time. As had happened following the United States' entry into the Great War 24 years earlier, private industry again stepped up to arm our nation's soldiers, sailors and airmen during the Second World War. One such company was the Inland Division of General Motors, based in Dayton, Ohio. Inland came into being in 1922 to produce steering wheels for GM vehicles. The plant site included five hangers that had once been owned and used by the Wright Brothers to build their airplanes.

As in the previous worldwide conflict, the number of weapons ready to be fielded by our armed forces was woefully inadequate, so many manufacturers modified their factories to produce the needed weapons of war. Inland did its part by producing a new carbine that had been adopted by the military in October 1941, and by the end of the war around 6,232,100 had been completed overall. Almost half of that number came from Inland Manufacturing.

Battle Legacy

Known generically as the "M1 Carbine," this handy weapon began with a request from the Chief of Infantry to the Ordnance Department in 1938 to develop a

"light rifle" or carbine. The impetus behind this move was the belief that a weapon was needed for officers and specialized troops that was more accurate and powerful than the handgun or submachine gun at typical combat distances. A formal requirement was approved for this weapon in 1940 and called for a lighter and more compact firearm that would take an intermediate .30-caliber cartridge. Unlike the potent .30-06 round used in Model 1903 Springfield rifles (made after 1905), the M1 Garand, the BAR and heavy machine guns, the cartridge for the carbine would have a 110-grain, round-nose FMJ bullet with an approximate velocity of 1,970 fps out of an 18-inch barrel for 948 foot-pounds of muzzle energy.

After the specifications came out in 1941, a competition developed among U.S. arms makers and designers to obtain the lucrative government contract for this weapon. Eventually Winchester began plans for a light rifle with the action based on a short-stroke piston that had been designed by David Marshall "Carbine" Williams (although there is some evidence that a similar action had been previously submitted to the U.S. Patent Office). Winchester had been working on a .30-06 M2 rifle for the Marine Corps, but the prototype was not deemed reliable.

It was determined that with some modifications and downsizing the rifle might just be what the military was looking for in a carbine. A team composed of David Williams and several Winchester engineers developed a prototype that was completed in just 13 days, and it was

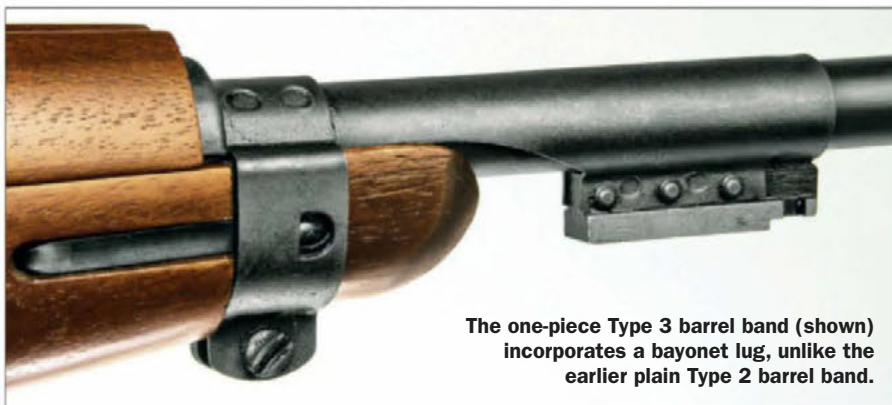


The M1 Carbine served honorably in World War II, Korea and beyond. The Inland Division of General Motors produced a large number of the Carbines fielded around the world.

DOD Photos

INLAND M1 CARBINE

Like the late-production WWII M1 Carbiners, Inland's 1945 replica has a round bolt as well as a fully adjustable "peep" sight mounted in a dovetail.



The one-piece Type 3 barrel band (shown) incorporates a bayonet lug, unlike the earlier plain Type 2 barrel band.

"M1 CARBINES were supplied to American infantry officers, paratroopers, NCOs, ammo bearers, operators of crew-served weapons, forward artillery observers and other frontline troops."

well-received by Army observers. A second, refined prototype competed against other industry entries in September 1941, and Winchester came out on top. The company's M1 Carbine proposal was standardized on October 22, 1941.

Deliveries of the M1 Carbine began in mid-1942, with priority going to the European theater of operations. What began as a limited-issue weapon quickly changed as M1 Carbiners were supplied to American infantry officers, paratroopers, NCOs, ammo bearers, operators of crew-served weapons, forward artillery observers and other frontline troops. What the M1 Carbine lacked in stopping power it made up for in firepower; plus the non-corrosive primers used in the .30 Carbine ammo were a godsend to combat troops. To make the carbine even more compact, a version with a folding-wire buttstock was produced for airborne troops. Overall, about 150,000 copies of this model were manufactured. As shipments of the M1 Carbine made their way to the Pacific theater, the little gun's light weight, compact size and firepower won high praises. The .30 Carbine round easily penetrated Japanese helmets and clothing, but complaints still surfaced regarding its knockdown power and inability to penetrate small trees and light cover. However, the size of the round allowed more ammo to be carried per soldier, which helped make up for the other deficiencies.

Originally, the M1 Carbine was to be a select-fire weapon, but the rush to get the gun to the front lines necessitated a semi-auto version to speed production, and this model used a 15-round magazine. As the war progressed and more high-capacity, select-fire weapons

The M1 Carbine fought in Europe and the Pacific in WWII. Here a Marine stands guard while the flag is raised in Iwo Jima.



Photo Courtesy National WWII Museum

SPECIFICATIONS

INLAND M1 CARBINE

CALIBER:	.30 Carbine
BARREL:	18 inches
OA LENGTH:	35.75 inches
WEIGHT:	5.18 pounds (empty)
STOCK:	Oil-finished walnut
SIGHTS:	Front post, adjustable rear
ACTION:	Semi-auto
FINISH:	Parkerized
CAPACITY:	15+1, 30+1
MSRP:	\$1,049



Photo Courtesy Ronald Dahlmer

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Aguila 110 FMJ	2,011	2.44
Federal American Eagle 110 FMJ	2014	2.38
Federal 110 Power-Shok JSP	1,985	2.42

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 50 yards.



were seen on the battlefield, a select-fire M2 Carbine with a 30-round magazine was adopted in late October 1944. It had an 850- to 900-rpm rate of fire and saw limited use towards the end of the war as the American troops invaded Germany and fought in the Philippines. A final carbine type was the T3, which was an M1 Carbine fitted with an infrared sniper scope. It saw use in Okinawa but had an effective nighttime range of only about 70 yards. Still, some 30 percent of small-arms casualties suffered by the Japanese during this battle could be attributed to the T3. The M1 Carbine and M2 went on to serve in Korea (mostly in the M2 form) and then again in Vietnam, where they were generally issued to Air Force Security Police, Special Forces and South Vietnamese troops.

Gun Details

When I was growing up in the late 1950s/early 1960s, government-surplus M1 Carbines were staples at gun shows and local gun stores, generally selling for bargain prices. That was then. Fast-forward to today and that \$50 GI carbine is now \$1,250—if you can find one. To meet the burgeoning demand for quality M1 Carbine replicas, a new company, Inland Manufacturing, is now producing reproductions of the M1 in several configurations for modern shooters and collectors.

The basic offering is an M1 with the same characteristics as the final production model that the original Inland Division made. As such, it features a Type 3 bayonet lug/barrel band (which earlier versions didn't have), a fully adjustable rear sight, a push-button safety, a round bolt, a "low wood" walnut stock and a 15-round magazine. The magazine catch used on the M2 has been fitted so the gun can use 30-round magazines. For states with bayonet lug and magazine capacity restrictions, Inland produces an M1 Carbine variant that is almost identical to the aforementioned M1 but has a Type 2 barrel band and a 10-round magazine. Finally, there is an M1A1 Paratrooper Model based on the 1944 version, with a pistol grip and a wire folding stock.

I had an opportunity to appraise the new Inland M1 Carbine, and judging from the many examples I saw in my youth, I don't think you could find a more realistic M1 Carbine unless you picked it up off the sands of Iwo Jima. Everything about the replica just looked *right*, from the oil-finished stock to the matte-finished, Parkerized steel barrel and receiver. The stampings on the steel parts look original, as does the Ordnance cartouche on the buttstock. The carbine replica comes with

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INLAND M1 CARBINE

an OD green cloth sling, an oiler and a 15-round magazine.

The shotgun-type buttplate is a steel stamping that is knurled to help prevent slippage. The rear “peep” battle sight is dovetailed into the receiver and can be hand-adjusted for windage and elevation. The front sight is pinned to the barrel and protected by two out-swept “wings.”

These new replica carbines are so realistic that they are specially marked by Inland Manufacturing in out-of-the-way places so that they can't be passed off as mint originals by unscrupulous sellers bent on fraud. The fit and finish on my test sample was breathtaking, and at a recent gun collector's show where the new Inland carbines were being displayed alongside

RIGHT: Inland's replicas feature the M1's “low wood” walnut stock. Also note the Ordnance cartouche stamped on the right side.

BELOW: Wearing some authentic WWII items, the author did some plinking with Inland's M1 1945 replica in a lot behind the Inland Manufacturing facility.



original M1 Carbines, even the experts were impressed.

Range Time

While GI-surplus .30 Carbine ammo is now in the collector's realm, it is still being made commercially, and Inland supplied me with some military-style, 110-grain Federal American Eagle and Aguila FMJs. I also had a 20-round box of Federal Power-Shok cartridges with 110-grain JSPs. The box specifies that it is a “varmint” load, and my guess is that it might just be suitable for both two- and four-legged varmints.

On an early December day with no rain or snow in the forecast and temperatures predicted to be as high as 42 degrees, I headed off to my outdoor range to see how the Inland M1 Carbine would perform on paper. I set my target stand up at 25 yards to get some idea where the little carbine was shooting before I moved the stand back to the 50-yard mark. Shooting from the bench and using a sandbag rest, I was able to get the sights zeroed in and found that it was still shooting a few inches high even at the maximum setting, but all was well in terms of windage. The three brands of ammo did not differ much in point of impact, which was a good thing.

At 50 yards, I was still hitting high, but I compensated by adjusting my aiming point and soon had bullets plunking into the orange oval in the center of the silhouette targets I was using. All the groups were fairly uniform in size, with only one group measuring a hair over 3 inches. My best five-shot cluster, produced with the Federal American Eagle cartridges, measured 2.38 inches. Second place, at 2.42 inches, went to the Federal 110-grain JSP load, and the Aguila Ammunition scored a 2.44-inch group.

On the whole, I don't think that's too bad considering the fairly heavy pull of the military-type trigger. In addition, the little rifle was easy to control in rapid fire and ran flawlessly with the ball-type commercial ammo, and the sights were easy to pick up given the overcast conditions.

Final Notes

You'll note that the MSRP on these Inland Manufacturing M1 Carbines

are not cheap, but they are American made, as close to the originals as possible, and exhibit excellent quality. I think they are a true value given what even used, war-weary GI carbines are

The front sight post is protected by out-swept “wings.” Also note the Inland roll mark on the barrel, about 1.5 inches from the front sight.



going for these days. They'll really take you back in time, even if you do nothing more than just plink with one and if need be, with the right ammunition, they can also serve double duty for home defense or in the field. Ron Norton tells me there may be other Inland M1 Carbine variations in the future, so you might look ahead to some other interesting developments. The M1 Carbine served in World War II, Korea and Vietnam and is probably still on duty in some capacity in the backwaters of the world. Very few small arms hold that distinction. For more information on your chance to own a new version of this classic military arm, visit inland-mfg.com or call 877-425-4867. **SW**



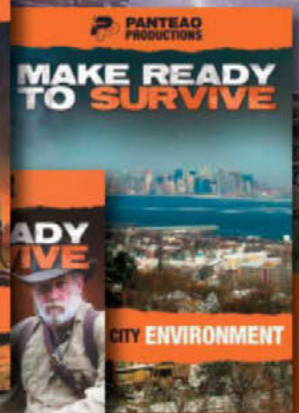
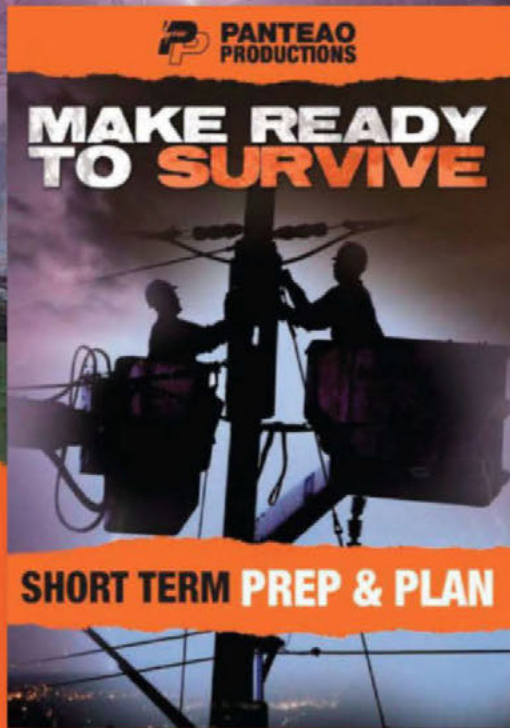
Editor's Note: We here at *Special Weapons For Military & Police* magazine would like to congratulate author William “Bill” Bell for his recent retirement after 38 years of outstanding service with U.S. Customs and Border Protection. Over the years, Bill has been one of Harris Publications' most steadfast contributors, writing for not only this magazine but also *Combat Handguns*, *Guns Of The Old West*, *Guns & Weapons For Law Enforcement* and many more. We look forward to having him in our contributor stable for many more years to come.



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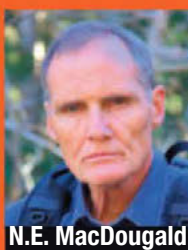
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A Russian Army sniper takes aim with the semi-automatic Dragunov SVD rifle, which first entered service in 1969. This updated version has a synthetic stock instead of the original's wood.



RUSSIAN SNIPER RIFLES

Roman Krajnov Photo

The history of Russian sniper rifles began during the early 1930s, when, following new Soviet doctrine, the Red Army initiated a countrywide program to promote individual marksmanship to youth and active-duty infantrymen. Among other activities, this program included the development of a new sniper rifle and the establishment of sniping schools, where tactics and marksmanship were taught to soldiers. The rifle choice was simple; the necessary number of newly produced Mosin M1891/30 bolt actions were hand picked for accuracy each year, then modified to accept scopes.

Shortly before World War II, the Red Army adopted the Tokarev SVT-40 semi-automatic rifle as its new standard weapon, and appropriate modifications were designed for the SVT-40 to be used as a sniper rifle with a newly developed 4X PU scope. When the "Great Patriotic War" broke out in 1941, the Red Army was still in the process of rearming its troops. As a result of frontline experience, Red Army command quickly recognized the great value of sniping, and sniper schools turned out a significant number of snipers. Throughout the war, their primary weapons were old, tried-and-true M1891/30 rifles with scopes, because it was found that the SVT-40 lacked the necessary accuracy. However, some famous Soviet snipers of the WWII era preferred the potentially less accurate Tokarev semi-auto rifle to the bolt-action Mosin rifle because the former offered a rapid

Mother Russia's combat-proven sharpshooters from WWII and beyond!

By Maxim Popenker

second-hit capability and was generally superior at short and medium ranges.

The semi-auto Dragunov SVD entered service in 1969. According to modern Western standards, the SVD is more of a "marksman" rather than a true "sniper" rifle. It was designed to provide every infantry squad a weapon with longer reach, equivalent in range to standard-issue NATO rifles of the period. Issued with a 4X PSO-1 scope or a variety of night sights, the SVD is still a popular sniper rifle for Russian personnel.

Despite its merits, the SVD falls short in terms of single-shot accuracy compared to

most Western sniper rifles. As a result, during the late 1990s, the Russian Army and police sought new sniper rifles that fired the same 7.62x54R ammunition but were capable of better accuracy. Two new rifles emerged: The SV-98 rifle, designed in Izhevsk, was based on the "Record CISM" target rifle; and the MTs-116M, designed in Tula, was based on the MTs-116 sporting rifle. Of the two, the SV-98 found wider acceptance, being used by both Russian military and police personnel. The MTs-116M rifle is mostly used in law enforcement.

Finally, Russian designers developed the 12.7mm manually operated bolt-action ASVK rifle. It is issued to special elements of the Russian Army and police, along with specially manufactured 12.7x108mm sniper ammunition for long-range work or standard-issue AP ammunition for anti-materiel work. Read on to learn more about each individual weapon system.

Mosin M1891/30

For WWII, the Russian Army modified Mosin M1891/30 infantry rifles for sniper duty by adding a scope mount, attached to the left side of the receiver. Due to the placement of the scope, clip loading was impossible, so the rifle had to be loaded by pushing loose rounds into the opened action. The rifle's action used a conventional rotary bolt with two locking lugs at the front; the bolt handle was bent down to clear the scope on opening. Standard iron sights were retained, and these rifles were usually sighted-in and zeroed without the bayonet. (Standard-issue M1891/30 rifles were normally zeroed with their bayonets attached.)

The integral magazine held five rounds of ammunition in a single stack. The sniper variants retained



their standard-issue wooden stocks as well as their canvas slings. Early versions were issued with 4X PE scopes that were designed during the early 1930s. Beginning in 1942, M1891/30 sniper rifles were issued with shorter and lighter 3.5X

PU scopes. For special work, especially behind enemy lines, some M1891/30 sniper rifles were issued with detachable "Bramit" sound suppressors, which were used in conjunction with reduced-velocity (subsonic) rounds to quietly take out sentries, guard dogs and other targets of opportunity.

SPECIFICATIONS

CALIBER:	7.62x54R
BARREL:	28.7 inches
OA LENGTH:	48.6 inches
WEIGHT:	8.4 pounds (empty)
SIGHTS:	Iron, 3.5X PU scope
ACTION:	Bolt
CAPACITY:	5+1



SVT-40

Like the M1891/30, Tokarev SVT-40 sniper rifles were built from standard-issue rifles, hand picked and modified for scope mounts on the receiver. These mounts accepted quickly-detachable 3.5X PU riflescopes that were originally designed specifically for use on these Tokarev SVT-40 rifles.

The Tokarev SVT-40 utilized a gas-operated action with a short-stroke gas piston and a manual gas regulator located above the barrel. The prominent muzzle brake helped decrease the recoil and muzzle rise for faster follow-up shots. The SVT-40 rifle was fitted with a wooden stock and detachable 10-round magazines, although in-service magazines were often refilled "in-place" using standard-issue, five-round M1891/30 stripper clips (two per magazine).

SPECIFICATIONS

CALIBER:	7.62x54R
BARREL:	24.6 inches
OA LENGTH:	48.3 inches
WEIGHT:	8.5 pounds (empty)
SIGHTS:	Iron, 3.5X PU scope
ACTION:	Piston-operated semi-auto
CAPACITY:	10+1

It must be noted that in wartime service the SVT-40 turned out to be problematic, due to much higher requirements for manufacture, maintenance and handling (especially under adverse conditions), compared to Mosin bolt-action rifles. The accuracy of SVT-40s was also rather uninspiring, and, as a result, relatively few SVT-40 rifles were actually issued as sniper weapons.



► Dragunov SVD

The Dragunov SVD was the first purposely built Soviet sniper rifle. Adopted in 1969, it was issued to a designated marksman of every infantry squad of the Soviet army to complement their AK, AKM and later AK-74 rifles. Extremely rugged and durable, the SVD offered “minute of enemy soldier” accuracy at ranges up to 800 meters. Normally issued with specially produced sniper-grade ammunition, it can also use all types of machine gun ammo in its 7.62x54R chambering, including AP and API. Oddly enough, since its user was ex-

pected to operate within the structure of a standard infantry squad, the SVD, most unusual for a sniper rifle, was equipped with a bayonet lug.

The SVD was built using a short-stroke gas piston operating system with a locking rotary bolt. The stocks, originally made from wood, featured a characteristic thumbhole, and the rifle included a separate forend. Current-production versions are manufactured with improved polymer stocks. Special SVD-S versions, produced for airborne troops, feature shorter barrels and side-folding stocks. The standard-issue sight is a 4X PSO-1 scope with

a range-finding reticle and a built-in IR detector. Other types of scopes or night sights can be installed using the standard rail on the left side of the receiver. Iron sights are provided as a backup measure.

SPECIFICATIONS

CALIBER:	7.62x54R
BARREL:	24.4 inches
OA LENGTH:	48.2 inches
WEIGHT:	9.5 pounds (empty)
SIGHTS:	Iron, 4X PSO-1 scope
ACTION:	Piston-operated semi-auto
CAPACITY:	10+1



► SV-98

The SV-98 is a manually operated bolt-action rifle. It uses a rotary bolt with three frontal lugs and a heavy barrel with a removable flash suppressor that can be replaced with a specially designed sound suppressor if required. Quite unusual for a modern military rifle, it has a painted, laminated-wood stock instead of one made of modern synthetics. The stock also has a thumbhole as well as

an adjustable buttplate and cheekrest. The rifle is equipped with backup iron sights and a scope rail above the receiver. The standard-issue sight is the 7X PKS-7 scope, but in service many operators prefer to use higher-quality, variable-power scopes of various makes and models. The rifle is fed using proprietary, 10-round, detachable magazines made from plastic.

It is normally issued with a sling, a detachable bipod, an anti-mirage band and a detachable carrying handle.

SPECIFICATIONS

CALIBER:	7.62x54R
BARREL:	25.6 inches
OA LENGTH:	50 inches
WEIGHT:	13.7 pounds (empty)
SIGHTS:	Iron, 7X PKS-7 scope
ACTION:	Bolt
CAPACITY:	10+1



► MTs-116M

In 1997, the Central Design Bureau for Sporting and Hunting Arms (TsKIB SOO) developed the MTs-116M sniper rifle for law enforcement use. It was derived from the highly successful single-shot MTs-116 “high-power match” rifle, which was used by Russian shooting teams to win many international shooting matches at 100- and 300-meter ranges.

The MTs-116M sniper rifle is a manually operated bolt-action rifle with a locking rotary bolt. The bolt has two radial lugs at the front. The free-floating barrel has a heavy profile and is fitted with a flash suppressor.

The rifle feeds from proprietary, five- or 10-round detachable box magazines. The trigger unit is fully adjustable. The stock is made from wood and is provided with an adjustable buttplate and cheekrest as well as a rear support monopod. An adjustable folding bipod is attached below the forend.

The MTs-116M sniper rifle is normally fitted with a scope or IR/night sight using proprietary QD mounts. No iron sights are provided in its basic configuration.

SPECIFICATIONS

CALIBER:	7.62x54R
BARREL:	25.6 inches
OA LENGTH:	49.2 inches
WEIGHT:	14.3 pounds (empty)
SIGHTS:	None
ACTION:	Bolt
CAPACITY:	5+1, 10+1



The MTs-116M sniper rifle is fitted with a bipod and an adjustable rear monopod.

"The ASVK is a manually operated bolt-action rifle in a bullpup configuration."



ASVK

The ZiD plant in Kovrov developed the large-caliber ASVK rifle, and it's now in use with special elements of the Russian Army and law enforcement. Originally developed mostly as an anti-materiel rifle (to be used with AP and API ammo produced for heavy machine guns), it also became a long-range anti-personnel tool with the introduction of sniper-grade 12.7x108mm ammunition. With sniper-grade ammunition, the ASVK's maximum effective range is about 1,500 meters.

The ASVK is a manually operated bolt-action rifle in a bullpup configuration. Due to the rear placement of the bolt, its operating handle is placed well forward, in front of the trigger, and connected to the bolt with a long bar. The ASVK's detachable box magazine

Elite Russian anti-terrorism units use the ASVK bullpup to stop threats out to 1,500 meters.

holds five rounds in a single stack. To reduce recoil, the free-floating barrel is equipped with a massive muzzle brake. The rifle is normally issued with a variable-power scope, and iron sights on folding bases are provided as a backup option. **SW**

SPECIFICATIONS

CALIBER:	12.7x108mm
BARREL:	39.4 inches
OA LENGTH:	56 inches
WEIGHT:	27.6 pounds (empty)
SIGHTS:	Iron
ACTION:	Bolt
CAPACITY:	5+1



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GEMTECH'S G-CORE SUPPRESSORS

BY JORGE AMSELLE

PHOTOS COURTESY GEMTECH

**Cutting-edge
pistol and rifle
suppressors
ready to strike
silently with
precision!**

Sound suppressors have never been more popular. Legal for civilian ownership in 39 states, the unfair stigma associated with these devices is dissipating while more and more people are recognizing their numerous positive attributes. Owning a suppressor does require a fair amount of time, paperwork and expense (the cost of the item plus a \$200 federal tax), but the process continues to be streamlined.

Of course, as a result there are new companies jumping into the suppressor market with some regularity. Gemtech is not one of these Johnny-come-latelies. In fact, the Idaho-based company has been making high-quality suppressors since 1993. Gemtech only makes suppressors and suppressor accessories, so this is not a side business for the company but rather its bread and butter.

Gemtech's G-Core sound suppressors, including the GM-9 (above) and GMT-300BLK (right), have a unique internal baffle design for maximum strength and signature reduction.



Quiet Strikers

Those new to the suppressor market may wonder why they should go to the trouble and expense of buying one. If you are ever forced to shoot in low-light conditions where your night vision could be compromised by muzzle flash, suppressors solve this problem. Since the internal baffles are temporarily trapping the escaping gases, unburned powder that would otherwise exit the barrel and create a muzzle flash is also trapped and burns inside the baffles.

Most importantly, however, suppressors protect your hearing. This is especially important if you have to fire indoors. Again, in an indoor scenario, you likely won't have hearing protection. After a few shots, your hearing will be seriously compromised, and you will suffer permanent damage. Tactical teams are increasingly using suppressors for this very reason.

Various comparisons can help us understand relative noise levels. A normal conversation is 40 to 60 decibels. At 85 decibels, it is possible to sustain hearing damage if the noise is continuous. A gas-powered chainsaw reaches about 110 decibels, and at 120 decibels hearing damage can occur from a single noise. Your ears will hurt at 130 decibels, and a high-powered rifle will produce 160 to 170 decibels of sound. A good suppressor will reduce the sound level by 20 to 40 decibels, a much safer range.

Strong & Lightweight

The latest and greatest offering from Gemtech is its G-Core line, available for .22 LR, 9mm and .45 ACP pistols as well as the 300 Blackout. The G-Core features a solid two-piece design with a unique use of turbulence voids, meaning the specific design of the internal baffles. It was designed using computational fluid dynamic software, which allowed the engineers to digitally test the suppressors before samples were built. The designers also used a finite element analysis process to maximize the strength and weight properties of the final product. The prototypes were tested with live ammo to the point of failure, and the final result was a suppressor that maximizes both sound reduction and accuracy. According to Gemtech, the G-Core units are "the strongest suppressors we have ever tested."

The GM-22 is designed for .22 LR and similar rimfire cartridges, including the .22 WMR and .17 HMR. The sound reduction is an impressive 36 to 39 decibels, and with subsonic ammunition (which Gemtech also produces), the sound signature is down to airgun levels. Made from 7075-T6 aluminum, the unit is only 5 inches long and weighs 2.5 ounces. It is also rated for full-auto fire. The tube itself has a flat black Cerakote finish that helps



reduce its infrared signature, and the GM-22 will fit on standard 1/2x28 threads.

The integral MIST-22 suppressor should also be a welcome addition for rimfire fans of the ubiquitous Ruger 10/22. This suppressor replaces the barrel and has internal baffles that are surrounded by an aluminum sleeve.

The Gemtech GM-9 is designed for 9mm centerfire weapons and will accept multiple adapters for different pistols and carbines. The GM-9 offers a sound reduction of 30 to 37 decibels and will handle full-auto fire. One of the best features is that it comes apart easily and can be serviced by the user. The GM-9's 7075-T6 aluminum construction helps keep the weight of the unit down to 5 ounces.

Made for .45 ACP weapons, the GM-45 offers a 32- to 35-decibel sound

reduction when wet and 21 to 23 decibels dry as well as extreme versatility. Most larger-caliber suppressors can just as easily be used on smaller-caliber guns, saving the user money, and the GM-45 is no exception, as it can work with 9mm, 10mm and .40 S&W weapons. Rated for full-auto fire, the GM-45 is only slightly larger than the GM-9.

Finally, the GMT-300BLK is optimized for rifles with a 7.5-inch barrel or longer and chambered in 300 Blackout using both subsonic and high-velocity ammo. Rated for full-auto use, the GMT-300BLK delivers an impressive sound reduction of 36 to 39 decibels. The titanium unit weighs 14 ounces. For more information, visit gem-tech.com or call 208-939-7222. **SW**

FUEL FOR THE FIRE

■ BY MICHAEL O. HUMPHRIES

While a well-designed and quality-made suppressor is a must for high-performance sound reduction, dedicated ammunition is also just as important. And who would know better what ammunition will make your Gemtech sound suppressor tick than the company itself?

The Gemtech ammunition line is broken up into three primary categories: a subsonic .22 LR load as well as subsonic and supersonic 300 Blackout offerings. The 42-grain rimfire load is claimed to be dependable in guns ranging from 2-inch-barreled pocket pistols up to full-sized Ruger 10/22 rifles.

Gemtech's subsonic 300 Blackout offerings come in a range of bullet weights and are designed to work in a



variety of gun types, from 8-inch-barreled, AR-platform SBRs all the way up to 20-inch-barreled precision rifles.

Gemtech's supersonic 300 Blackout loads, also offered in a variety of bullet weights, are intended for range, duty and hunting uses.



LEWIS MACHINE & TOOL

CQBODGB



“Lewis Machine & Tool builds premium rifles, and the CQBODGB is an exemplar of the company’s attention to detail.”

THIS MEAN, GREEN, 5.56MM CARBINE IS A SLICK, SMOOTH-RUNNING MACHINE!

BY RICHARD JOHNSON

Sometimes there is a rifle that just flat-out impresses you with its reliability, accuracy and finish. The CQBODGB from Lewis Machine & Tool (LMT) is one of those rifles. Let me introduce you to this incredible gun.

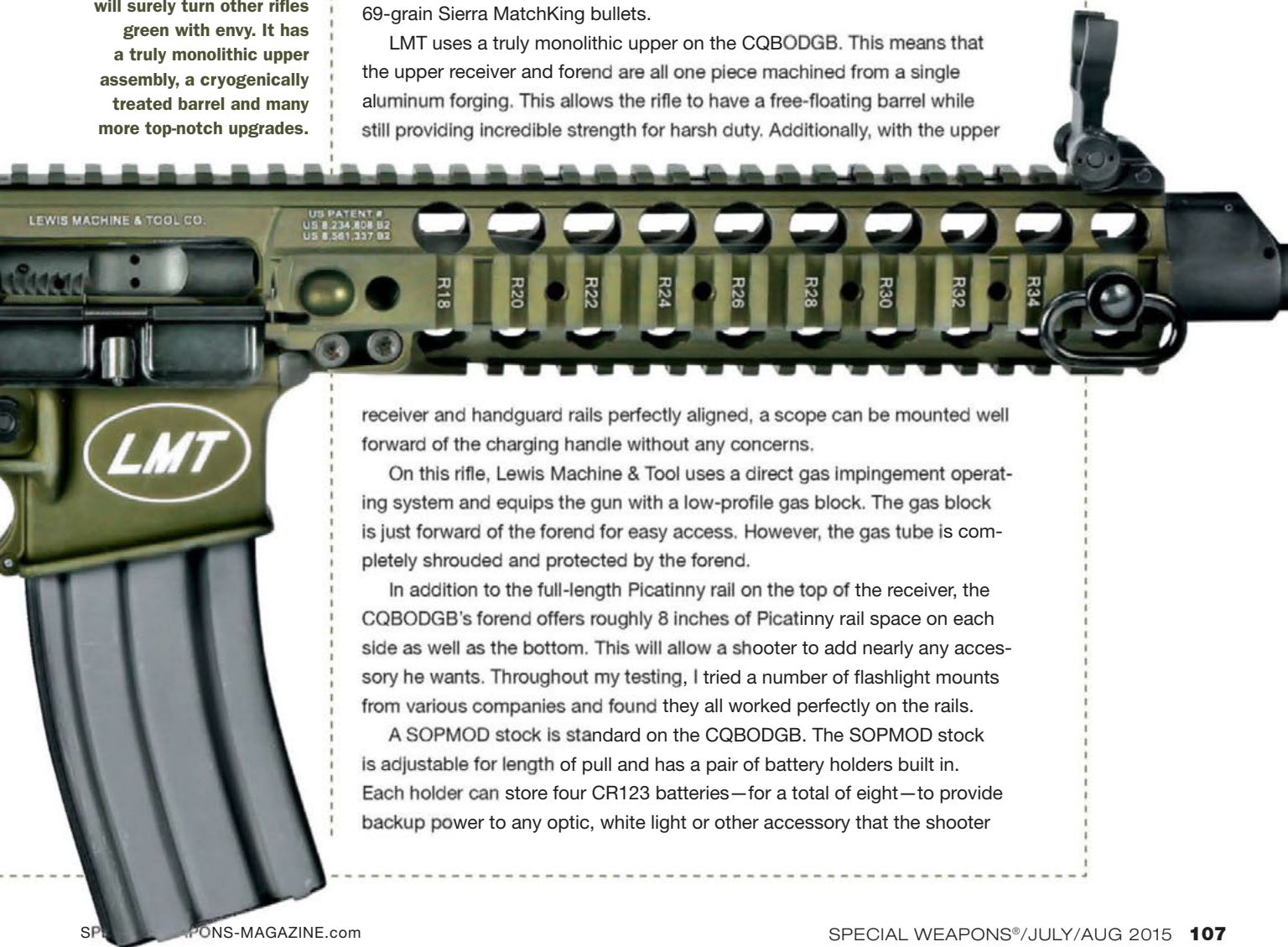
Gun Details

CQBODGB stands for “Close-Quarter Battle Olive Drab Green,” with the latter “B” indicating it has black furniture. As the name suggests, the gun has primarily an olive drab green finish and is designed for combat. The gun is built for harsh environments yet has an appearance that makes it perfectly suitable for display next to any safe queen.

The 16-inch barrel has a heavy contour and is chrome lined. The rifle has a 5.56mm NATO chamber and can safely fire .223 Remington ammunition. The barrel has a 1-in-7-inch twist rate, meaning it can stabilize the longer, heavier bullets in this caliber. LMT cryogenically treats these barrels for improved accuracy and barrel life. When I got the CQBODGB rifle to the range, I was very impressed with how accurate the gun was—especially with 69-grain Sierra MatchKing bullets.

LMT uses a truly monolithic upper on the CQBODGB. This means that the upper receiver and forend are all one piece machined from a single aluminum forging. This allows the rifle to have a free-floating barrel while still providing incredible strength for harsh duty. Additionally, with the upper

Finished in an olive drab color, the accuracy of the 5.56mm LMT CQBODGB will surely turn other rifles green with envy. It has a truly monolithic upper assembly, a cryogenically treated barrel and many more top-notch upgrades.



receiver and handguard rails perfectly aligned, a scope can be mounted well forward of the charging handle without any concerns.

On this rifle, Lewis Machine & Tool uses a direct gas impingement operating system and equips the gun with a low-profile gas block. The gas block is just forward of the forend for easy access. However, the gas tube is completely shrouded and protected by the forend.

In addition to the full-length Picatinny rail on the top of the receiver, the CQBODGB's forend offers roughly 8 inches of Picatinny rail space on each side as well as the bottom. This will allow a shooter to add nearly any accessory he wants. Throughout my testing, I tried a number of flashlight mounts from various companies and found they all worked perfectly on the rails.

A SOPMOD stock is standard on the CQBODGB. The SOPMOD stock is adjustable for length of pull and has a pair of battery holders built in. Each holder can store four CR123 batteries—for a total of eight—to provide backup power to any optic, white light or other accessory that the shooter

LEWIS MACHINE & TOOL CQBODGB



might have. The battery compartments are long sleeves with double O-rings on the cap to keep the power cells dry.

The battery compartments require a swell in the width of the stock. This swell serves as a cheekrest, allowing the shooter to get a better cheekweld when shouldering the rifle. At the tail end of the stock is a rubber buttpad that helps reduce felt recoil. Additionally, the buttpad improves the contact between the gun and body to reduce slipping while shooting and moving.

There are quick-detach (QD) sling attachment points on both sides of the SOPMOD stock. The forend has QD attachment points on both the left and right sides, and a fifth point is in the 6 o'clock position. Two push-button QD swivels ship with the rifle.

Optional tactical folding sights (\$40 extra) came with the gun. The sights were very usable and folded very flat when I

didn't need them. The rear sight folds flat enough that I had no problem mounting a low-power scope above it.

LMT uses the company's own tactical charging handle in the CQBODGB. This charging handle is designed to provide easier manipulation of the bolt. I found the handle was easy to operate one-handed, both with and without gloves.

One of the most important aspects of shooting is trigger control, and having a good trigger can really enhance a shooter's ability to put rounds on target. The LMT trigger has a small amount of take-up with a crisp break. Using my Lyman digital trigger pull gauge, I measured the trigger at 5.7 pounds on a 10-pull average. That might sound a little heavy to some readers, but I found it to be quite nice. The pull was exceptionally consistent from shot to shot.

Ergo makes the pistol grip used on the CQBODGB to LMT's specifications. I

like Ergo grips on AR-platform rifles, and this one felt very good. The grip surface was relatively soft and grippy without feeling sticky at all. It filled my medium-sized hands very well.

Of course, all of the nice features do not amount to a hill of beans if the gun doesn't perform. To me, the value of a gun is always determined on the range. Either the weapon will perform, proving its value, or it will not.

Range Time

As I stated at the start of this article, the CQBODGB carbine proved to be incredibly accurate and reliable on the range. When I headed out to my local shooting club, it was a sunny day with mild temperatures and only the lightest of breezes—perhaps the most ideal of conditions for testing a rifle.

Prior to heading out, I mounted a 1.5-4x20mm Leupold Mark AR MOD 1 scope to the rifle. This has become one of my favorite magnified scopes for AR-style rifles. The glass is extremely clear and bright, and I find that a low-power scope works very well for my needs. In addition

"I was immediately impressed by the accuracy I was able to achieve with this rifle."

SPECIFICATIONS

LEWIS MACHINE & TOOL CQBODGB

CALIBER:	5.56mm NATO
BARREL:	16 inches
OA LENGTH:	32-36 inches
WEIGHT:	6.8 pounds (empty)
STOCK:	SOPMOD
SIGHTS:	None
ACTION:	Direct impingement semi-auto
FINISH:	OD green
CAPACITY:	30+1
MSRP:	\$2,100

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Gorilla 69 MatchKing	2,650	0.63
HPR 60 V-MAX	2,516	0.69
Liberty Silverado 55 JHP	2,876	0.81

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.



The accuracy of the LMT CQBODGB carbine provides patrol officers the ability to end a violent confrontation quickly while minimizing the danger to innocents.



to the multicoated lenses and waterproofing, Leupold uses a variable-brightness green dot at the center of the reticle for fast target acquisitions. In the Leupold single-piece mount, the scope has proven to be a rock-solid performer.

I laser-bore-sighted the scope prior to heading out, so I was on paper with the first shot. I quickly got things dialed in with some Remington 55-grain FMJ rounds. After about 100 rounds, I pulled out the premium loads and started shooting for groups. I was immediately impressed by the accuracy I was able to achieve with this rifle.

Using a front bag rest, sub-1-inch groups were relatively common with all of the ammo I tried. I've never considered myself a bad shot, but the LMT rifle made shooting small groups easy.

One of the loads I had with me was Gorilla Ammunition's 69-grain Sierra MatchKing OTM ammo. This specific bullet is respected for its accuracy. More than one record has been broken using Sierra MatchKing bullets. In the Gorilla Ammunition load, the bullet performed as well as should be expected. I managed a best five-shot group of 0.63 inches. All of the groups I shot with this load remained under 1 inch.

As the bullet weights got lighter, the groups opened up slightly. With the HPR load using a 60-grain Hornady V-MAX bullet, the best five-shot group measured a hair under 0.69 inches. The Liberty

55-grain load was even lighter and had wider groups, with its best measuring 0.81 inches. While all of the groups were impressive, it did appear that the LMT rifle liked the heavier bullets.

Accuracy without reliability makes a rifle a single-shot gun. Fortunately, LMT delivered here as well. I had no failures with any of the ammunition I shot. All of the loads had different bullet designs and weights, and they all functioned flawlessly. I ran the gun with a variety of magazines in addition to the ones included with the rifle. Magazines from Brownells, Hexmag and Troy all functioned as expected.

The SOPMOD stock was very comfortable to use, giving me a nearly perfect cheekweld every time I brought the gun to my shoulder. Combined with the soft rubber pistol grip, the stock pulled in tight and really worked well to provide a solid shooting platform.

Final Notes

Lewis Machine & Tool builds premium rifles, and the CQBODGB is an exemplar of the company's attention to detail. It would be very hard indeed to beat the quality of an LMT build.

Accuracy and reliability are beyond question in this gun. Without reservation, I recommend this rifle to anyone wanting to pick up a top-quality AR-15 for any need, including duty use and home defense. For more information, visit lmtdefense.com or call 309-787-7151. **SW**

LMT CQBODGB DETAILS

- 1 A2-style flash suppressor
- 2 Chrome-lined, 16-inch barrel
- 3 Monolithic upper assembly
- 4 Accepts detachable magazines
- 5 5.7-pound trigger
- 6 Ergo pistol grip
- 7 AR-style safety selector
- 8 Battery storage compartments
- 9 Adjustable collapsing buttstock
- 10 Quick-detach sling attachments
- 11 Rubber buttstock
- 12 Enhanced cheekrest
- 13 LMT tactical charging handle
- 14 Folding rear sight
- 15 Uninterrupted Picatinny rail
- 16 Folding, winged front sight
- 17 Low-profile gas block

U.S. ARMY SNIPER SCHOOL

ON THE FIRING LINES with some of America's best battlefield marksmen!

BY JAY PINSKY



America didn't invent the term "sniper," but since 1955, when the U.S. Army operated its first sniper school at Camp Perry, Ohio, we've been trying to perfect it.

According to the Army Sniper Association, the British coined the now-infamous term during the 1800s while they occupied India. Whether you're in the British Army or the U.S. Army, the primary missions of a sniper remain the same: long-range precision fire and gathering intelligence.

The U.S. Army employed snipers long before it finally built a dedicated sniper school at Fort Benning, Georgia, in 1987. As far back as the Revolutionary War, skilled marksmen (sometimes called "sharpshooters") have wreaked

havoc on larger enemy forces with concealed and accurate fire, often pinning down units or simply killing key targets to weaken and demoralize the enemy. We weren't the only ones who knew the power and intimidation a well-trained sniper can cause. The British, the Germans and the Soviet Union all trained and employed skilled snipers in combat. In fact, it was the Soviets who first used two-man teams during World War II and employed more than 2,000 female snipers as well. Fast-forward to today. The U.S. Army understands the role well-trained snipers play in modern warfare and puts its best candidates through a seven-week course covering marksmanship, range estimation, target detection, stalks and written exams as core competencies.

Back To School

I recently had a chance to visit the U.S. Army Sniper School, and what I learned surprised me. "The people who do the best at U.S. Army Sniper School are the ones who don't know anything before they get here," said Non-Commissioned Officer in Charge Sergeant First Class Jeremy Mangione.

Mangione explained himself a little further. "I can take a soldier who is horrible and teach him how to shoot pretty well. But the know-it-all? Not so much. I can teach you how to run faster and how to shoot well, but what I can't teach you is what to do when I'm not there. I need to trust you." Trust, it seems, is the ultimate quality in a sniper because the ultimate decision a well-trained sniper makes can be the difference between



The U.S. Army Sniper School, at Fort Benning in Georgia, is designed to train members of the military to become top-tier snipers. Shown are students in known-distance training on the Maertens Range.

John Helms/U.S. Army Photo

“As far back as the Revolutionary War, skilled marksmen...have wreaked havoc on larger enemy forces with concealed and accurate fire...”



Susanna Avery-Lynch/U.S. Army Photo

Remaining concealed is one of the most important skills a sniper must acquire, allowing them to observe and strike if needed.

victory or defeat and the lives of a few or even many. “Targets are decisions,” Mangione said. “Is the guy at 200 yards easier? Maybe yes, but is he as valuable as the target at 600 yards? The sniper needs to know.”

Sniper candidates must pass through seven weeks of training to earn the title of “sniper.” The breakdown in training goes like this:

Week 1: Stalking, range estimation, target detection

Week 2: M110 marksmanship, ballistics

Week 3: M110 data gathering, written exam

Week 4: M2010, night shoot

Week 5: Unknown-distance qualification, M9 pistol, movers

Week 6: Alternate firing positions, M107, final exam

Week 7: FTX, final shot, graduation

Snipers use three primary platforms, including the 7.62mm Knight's Armament M110 rifle, the M2010 in .300 Winchester Magnum and the Barrett M107 in .50 BMG. According to Mangione, snipers create opportunities to surgically remove strategic targets from the battlefield, prearrange precision fire, serve as overwatch for enemy areas, shut down key pieces of terrain and completely demoralize the enemy.

(continued on page 126)

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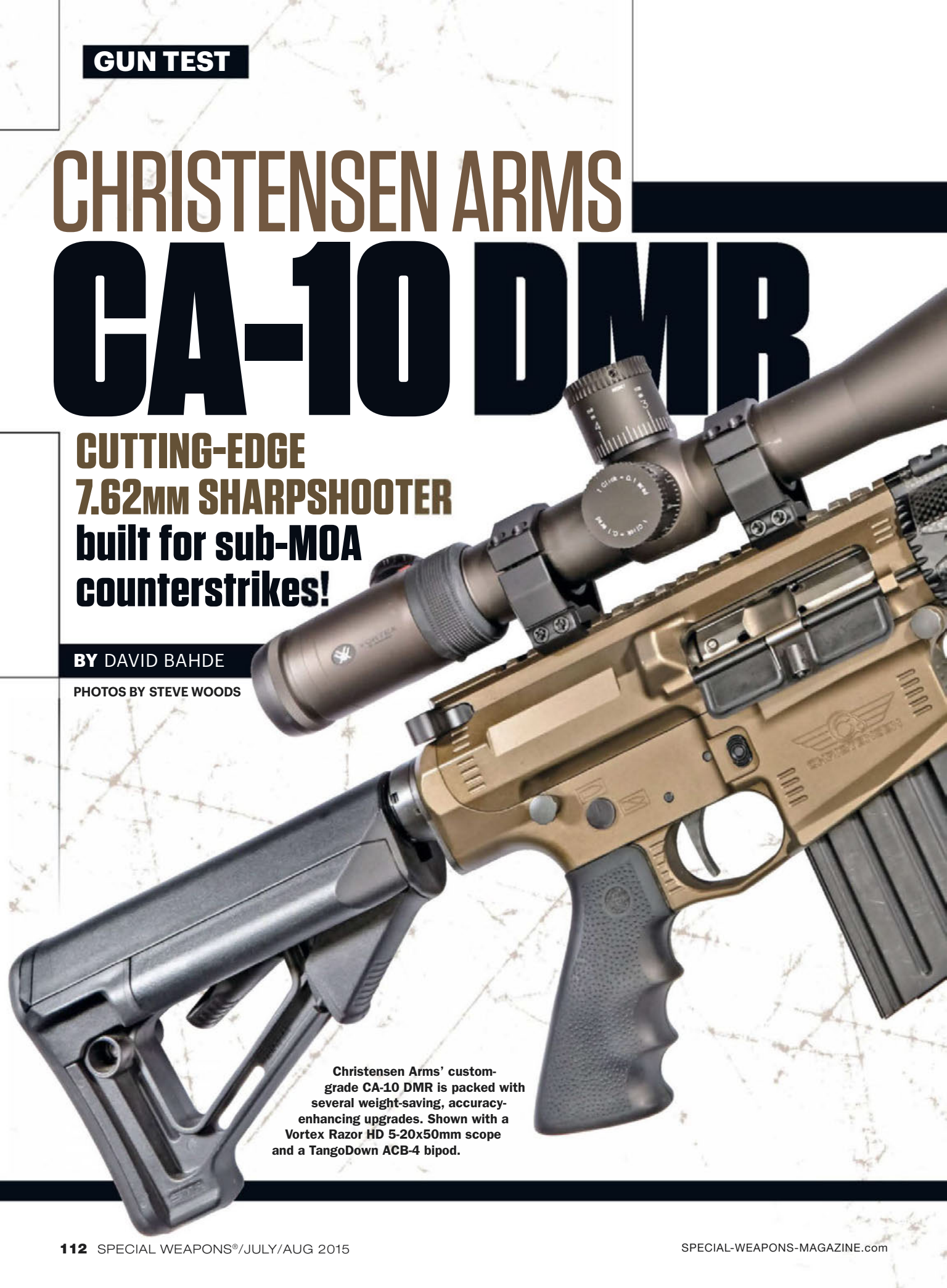
GUN TEST

CHRISTENSEN ARMS CA-10 DMR

**CUTTING-EDGE
7.62MM SHARPSHOOTER
built for sub-MOA
counterstrikes!**

BY DAVID BAHDE

PHOTOS BY STEVE WOODS



Christensen Arms' custom-grade CA-10 DMR is packed with several weight-saving, accuracy-enhancing upgrades. Shown with a Vortex Razor HD 5-20x50mm scope and a TangoDown ACB-4 bipod.



“The CA-10 DMR is built to very high standards, and it’s a pure joy to carry and shoot.”

Today, many firearms make use of durable, weight-saving materials other than metal. In fact, polymer is used in large numbers of very popular firearms these days. All-metal firearms are now the exception, and that won’t change any time soon. For those who want the best, carbon fiber is growing in popularity when it comes to firearms materials. It is very strong, lightweight and incredibly resistant to chemicals and the environment. Carbon fiber is popping up everywhere, from rifle stocks and handguards to barrels.

Generally, most of the weight in a rifle, especially a precision rifle, is in the barrel. Steel bolt-action receivers, even very strong ones, are very light when compared to the barrel. AR-type receivers are impressively lightweight, even billet models. Cutting weight from your barrel can make a huge difference in how your rifle balances and carries, but trying to get the best accuracy and least weight is always a balancing act. One of the best solutions currently is mating carbon fiber and steel in a precision barrel. It’s been tried for years with varying degrees of success, but it looks like Christensen Arms has worked out the details pretty well.

Christensen’s Edge

Christensen Arms is the sister company of a business that has been dedicated to carbon-fiber construction for years—Applied Composite Technology (ACT). Dr. Roland Christensen, the founder, started by creating carbon-fiber components for

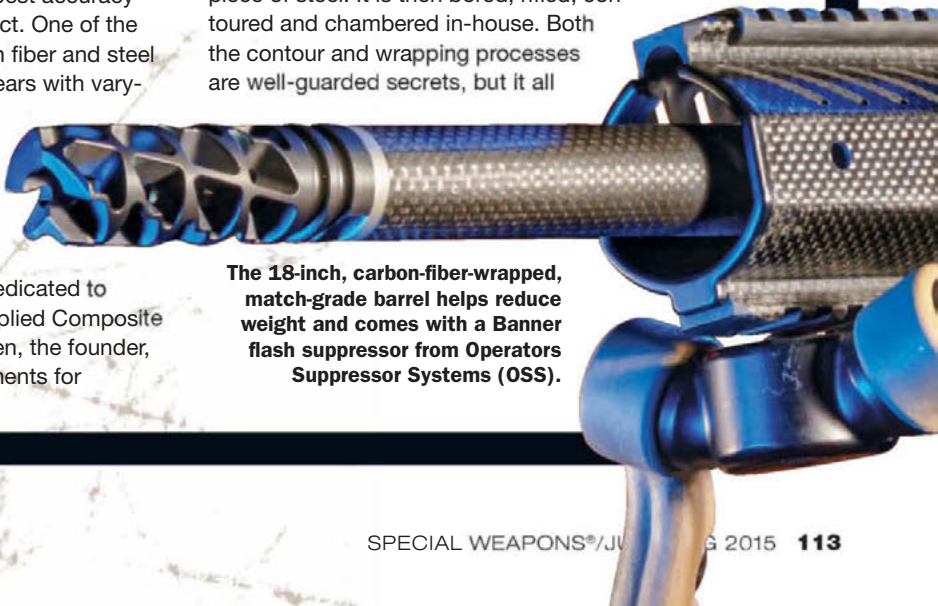
both the aerospace and medical industries, and ACT remains a leader in these arenas. As a sibling company, the knowledge, technology and experience transfers over pretty easily.

Christensen Arms takes this knowledge and puts it into its barrels, components and rifles. I recently toured both factories, and their manufacturing processes are strikingly similar; the fact that ACT has a couple decades of experience building carbon-fiber products for one of the most detailed and demanding industries on the planet certainly doesn’t hurt. The dedication to precision, detail and craftsmanship was obvious.

The heart of any quality firearm is the barrel, and creating a precise blending of steel and carbon fiber is anything but easy. One of the first to offer carbon-fiber-wrapped barrels, Christensen Arms brings a wealth of experience to the table. I recently had the opportunity to try one the company’s complete rifles out for myself, the CA-10 DMR in 7.62mm NATO.

Gun Details

Weighing in at a mere 7.8 pounds unloaded, the CA-10 is one of the lightest 7.62mm AR rifles out there. Most of the weight savings comes from the carbon-fiber-wrapped barrel. Each barrel is made starting from a solid piece of steel. It is then bored, rifled, contoured and chambered in-house. Both the contour and wrapping processes are well-guarded secrets, but it all



The 18-inch, carbon-fiber-wrapped, match-grade barrel helps reduce weight and comes with a Banner flash suppressor from Operators Suppressor Systems (OSS).



happens there. The 18-inch barrel has a 1-in-10-inch twist rate for stabilizing heavier bullets, a match chamber and M4-style feed ramps for reliability. It also sports 5/8x24 threading for suppressor use, and Christensen Arms ships the rifle with an OSS Banner flash suppressor.

Surrounding the barrel and rifle-length gas system is Christensen's own carbon-fiber handguard, which has a long top rail that mates up with the upper receiver's to provide plenty of space for mounting sights, optics and night vision. The handguard's short bottom rail accommodates bipods and other devices yet allows for a solid handhold at the rear. The handguard's flat sides have mounting holes for adding accessory rails.

The billet-machined upper receiver houses a nitride-coated bolt carrier group and an extended charging handle. There is no forward assist. The lower receiver is also machined from a billet of 7075-T6 aluminum and includes an ambidextrous magazine release and an enlarged bolt release. DPMS-pattern magazines fit nicely into the flared magazine well, and the enlarged triggerguard accommodates gloved hands. Christensen Arms also includes its LTM trigger system, which physically blocks the hammer when "safe" is selected. Precision machined from the highest-quality materials, the trigger is smooth with a clean, creep-free break.

The lower receiver also features a Magpul STR stock and an Ergo pistol grip. Some of the CA-10 DMR's nice touches include stylish, matching contours, pictorial markings around the safety selector and pushpins that are easy to grab, eliminating the need for a punch to push them out for disassembly. Each rifle



Christensen Arms equips the CA-10 DMR's billet-crafted lower receiver with easy-to-read safety markings and large takedown pins (above left) as well as a collapsible Magpul STR stock (above).

Note the integral triggerguard, large enough for operators wearing gloves, and the flared magazine well.

"Weighing in at a mere 7.8 pounds unloaded, the CA-10 is one of the lightest 7.62mm AR rifles out there."

SPECIFICATIONS

CHRISTENSEN ARMS CA-10 DMR

CALIBER:	7.62mm NATO
BARREL:	18 inches
OA LENGTH:	38.3 inches
WEIGHT:	7.8 pounds (empty)
STOCK:	Magpul STR
SIGHTS:	None
ACTION:	Direct impingement semi-auto
FINISH:	Flat Dark Earth
CAPACITY:	20+1
MSRP:	\$3,500

PERFORMANCE

LOAD	VELOCITY	ACCURACY
Federal 175 Gold Medal Match BTHP	2,440	0.59
Federal M118 LR	2,440	0.69
Hornady 155 TAP	2,520	0.65
Silver State Armory 175 OTM	2,429	0.55

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.



is hand-built to your specifications; different triggers or other accessories can be added at the customer's request.

Given the rifle's DMR (designated marksman rifle) designation, I set it up to accomplish that task. Most of the testing was done using a Gemtech Sandstorm titanium suppressor. Weighing in at only 13 ounces, it seemed a perfect match for this rifle. It has proven consistent, reliable and quiet on a number of rifles. It attached easily and lined up perfectly.

Sighting was accomplished using Trijicon's TARS (Tactical Advanced Rifle-Scope). Trijicon is known for building combat-ready scopes, and the TARS is no exception. It may be the most ruggedly built tactical scope on the market. Using a 34mm tube, it has a 50mm objective and a lighted mil-dot reticle.

Range Time

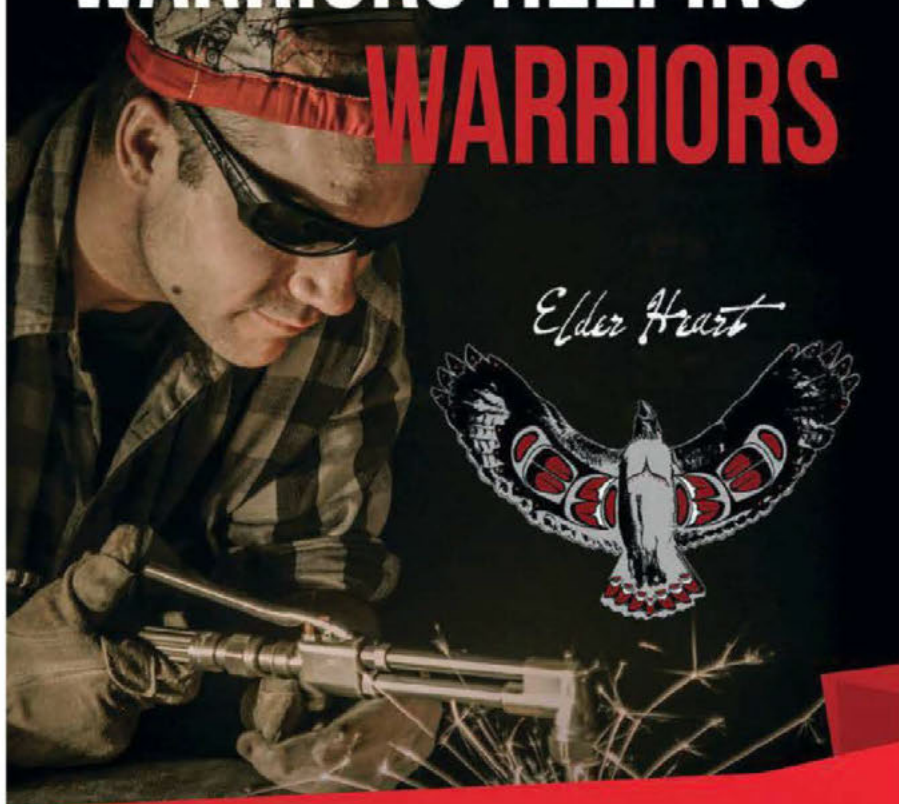
Christensen Arms's CA-10 and CA-15 rifles come with a 1-MOA accuracy guarantee, and my test rifle performed much better than that at the range. My best five-shot group at 100 yards measured 0.55 inches, with four of those rounds clustering into 0.25 inches. I completed all of the accuracy testing with the Gemtech Sandstorm suppressor in place. It had no adverse effect on the Christensen CA-10 DMR's functioning with any of the ammunition I used and provided for a very quiet, soft-shooting rifle.

The CA-10 DMR really seemed to like the 175-grain bullets, with most groups at or under 0.7 inches. Another favorite seemed to be the Hornady 155-grain TAP. I've seen this load produce some impressive accuracy and consistency, even out of 1-in-10-inch-twist barrels. While Hornady's 177-grain OTM rounds are great for longer ranges, the 155-grain TAP round is just about perfect for police precision rifles.

The rifle's reliability was excellent. I experienced no problems with or without the suppressor in place. As expected, there was more gas in the action when suppressed, but it never seemed to affect the CA-10's functioning. The OSS Banner flash suppressor also worked well. It offers moderate recoil reduction and excellent flash suppression, and it looks cool while matching all the carbon fiber.

Where this rifle really shines is working in various unsupported positions, especially without a suppressor. As I've said, it's very lightweight—as light as most of my 5.56mm rifles. The CA-10 DMR points very quickly, is easy to carry, and works around barricades and vehicles with ease. Even with the Sand-

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Two of the CA-10 DMR's enhancements include its carbon-fiber handguard (above), which is drilled and tapped for accessory rails, and the enlarged bolt release (above right).



▶ TRIJICON 3-15x50mm TARS

By David Bahde

Scopes meant for use on duty rifles need to be rugged. Their reticles need to be clear and consistent. Their adjustments should be simple, easy to see and easy to grasp. Lighted reticles are a nice feature, especially if they ac-

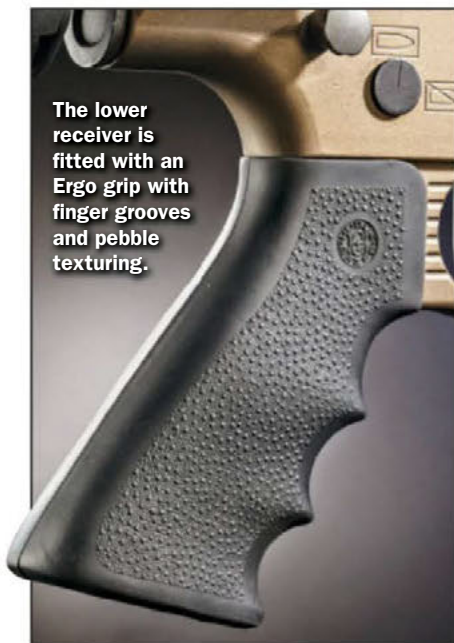
commodate night vision. You really need a purpose-built scope designed for the harshest conditions that holds a precise zero. Trijicon is the master of building rugged and reliable optics, and the TARS (Tactical Advanced RifleScope) continues that tradition.

I recently got the chance to test the Trijicon TARS on the Christensen Arms CA-10 rifle. This scope is solid, the glass is clear, and the controls are easy to operate and see. Adjustments are in mils to match the first-focal-plane JW Mil-Square reticle. This reticle allows for ranging if needed without requiring any math conversions. The scope's magnification range, from 3X to 15X, is just about perfect for most police or urban missions. Housed in a solid mil-spec tube, the TARS is fogproof and waterproof to 20 meters.

Mated to the Christensen Arms CA-10, it proved incredibly precise, and the TARS is one of the most repeatable scopes I've ever used. The glass is very clear, and the reticle is clean. Ranging proved accurate out to longer distances, and the reticle remained accurate at any power. The scope's knobs are large and lock into place. Equipped with usable scope covers, the TARS is ready to go right out of the box. If you want simplicity with combat-proven reliability, give the Trijicon TARS a try. For more information, visit trijicon.com or call 800-338-0563.



Photo courtesy Trijicon



The lower receiver is fitted with an Ergo grip with finger grooves and pebble texturing.

storm suppressor attached, the CA-10 DMR rifle was very well balanced.

I fired several 20-round strings with no noticeable point-of-impact shifts due to heat. One of my 20-round groups measured 1.5 inches at 100 yards. Firing as quickly as I could acquire the target, the rifle did not wander or change impacts. The cold bore was predictable and groups were consistent with little regard to barrel temperature.

Final Notes

Christensen Arms' trigger is crisp. Those who like single-stage precision rifle triggers will really like it. Although it's not flat, the trigger face is less curved, facilitating a straight-back pull.

There is no front sling-attachment point, so you will need to add one to a rail. With all the choices out there for QD add-ons, it won't be an issue, just be aware of the need. Overall, this is a fantastic rifle. It's very light, accurate and reliable. The CA-10 DMR is built to very high standards, and it's a pure joy to carry and shoot.

Christensen Arms also offers steel barrels. Adding the carbon-fiber-wrapped barrel kicks up the price a bit, but it remains in line with most custom-built precision AR rifles. I've used carbon-fiber-wrapped barrels on bolt guns, and the weight difference—measured in pounds—is immediately noticeable. It's even better in an AR. If you are in need of the weight savings and precision from a custom build, make sure you take a close look at all Christensen Arms has to offer. For more information, call 888-517-8855 or visit christensenarms.com. **SW**

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Northern Red's elite trainers add as much realism and stress as possible to the Advanced Close-Quarters Battle Course to increase your odds of surviving a gunfight.

EXTREME

CQB

Fighting armed opponents in Northern Red's Advanced Close-Quarters Battle Course.

BY LEN WALDRON • PHOTOS BY JON CHANG

You have become the king of the paper target. You and your team can enter a room and move around furniture, friendlies and debris only to cleanly smoke those targets clearly identified as bad guys. But what if, like in real life, those targets are moving, armed and firing back? Everything changes. Well-rehearsed drills come unwound, stalwart members break down, mistakes are made and good guys get killed. Paper is great for learning the fundamentals, but until

your target is as committed to the fight as you, it's all just kabuki. But Northern Red Training brings a team of battle-tested experts from America's most elite units to a world-class facility in North Carolina to teach the final and most important element in gunfighting—an armed opponent.

Armed Opponents

"It's impossible to simulate combat," says Zack Harrison, former Army special operations member and lead Northern

Red instructor. "We make our training as realistic and stressful as possible. Incorporating opposition into the training allows us to do a variety of things we couldn't otherwise do. First, it vets our tactics, techniques and procedures. Many times, particularly in the law enforcement community, having an armed opponent is not part of the training, and there is no way to test the validity of the training. They hit the same house, execute the same runs and end up gaming their own facilities. Unfortunately, that usually results in waiting until the shooting is real to tease out the weak points. In our view, that's the wrong answer. We want our students to not only see that the tactics work against an armed opposition, but to build confidence around those skills prior to combat."

The stress of an opposition in training is also a way to vet teammates. "Opposition tells us immediately how an individual reacts under stress," says Harrison. With some regularity, otherwise competent members will fold, or react badly, when faced with a determined enemy. "The simulation rounds are not the same as real combat, but they hurt. There is no better feedback than the immediate penalty of getting shot. Some students can rally, gather themselves and improve while others will break down or quit."

Building A Base

Northern Red starts with a departure from traditional methodologies. Its home facility is the Oak Grove Training Center in Hoffman, North Carolina. The 8,000-square-foot facility was designed with input from Northern Red's Tom Spooner, and it has a shoothouse with moveable walls for traditional entries and clearing runs as well as an upper floor simulating a residential shoothouse. Operators can go from a modern living room to the bedroom and bathroom, and so on, to encounter realistic transitions and scenarios. The realism provides several advantages. Teams can practice the basics and then move onto more variable and realistic environments, and then back to lower levels to replay and rehearse the parts where the teamwork broke down.

Learning a consistent and safe way to analyze and move through the layout and architecture of a building as well as make navigational decisions that don't leave un-cleared

avenues of approach for armed enemies takes some practice, but the Northern Red team breaks down the process by bucketing the similar types of doors, rooms, hallways and stairwells. By simplifying the basic building blocks of the structure, decision-making becomes faster for team leaders and more easily adaptable for team members. Students also learn simple but effective methods of flowing through the rooms, keeping their eyes ahead of their rifles and seeing the red dots of their optics as well as their targets for more consistent shot placement.

Making entry into a space, particularly where the occupants may be expecting you, is the point at which most teams get

compromised. To this end, the simple act of stacking a door with a four- to five-man team and choosing how to enter is covered in depth and with multiple repetitions. Northern Red advocates a "push and go" technique for a door that opens in and a "pull and hold" for doors that open out. This means the second man in the stack may be the first man in the room and should be prepared for assuming that role depending upon what the team encounters. This allows the team to move from room to room and door to door without reshuffling each time they have to enter a space.

"We want our students to not only see that the tactics work against an armed opposition, but to build confidence around those skills prior to combat."

Under Pressure

Learning and drilling the fundamentals while making tactical and navigational decisions is something most small units practice, and students typically arrive with a basic understanding of how to move with a team inside a building. However, those who are not accustomed to being shot at receive a rude and eye-opening experience when

an armed opponent is waiting behind the door. The Northern Red cadre considers this the place where true progress begins. According to Spooner, "This is where the training of their mind and managing stress begins. We apply both a shooting standard (target selection and accuracy) and a time standard. They are forced to manage the stress of all these factors. Some come unglued, some freeze, and others find a way to push through it."

Northern Red breaks the urgency decisions down into two general alternatives. Either the structure simply needs to be cleared and is presumed hostile, or there is a hostage in the building with hostiles and speed is the primary consideration.



Northern Red requires operators to play all positions in a CQB scenario. The second or third man into a room must be ready to take the first position as the team moves into the next space.

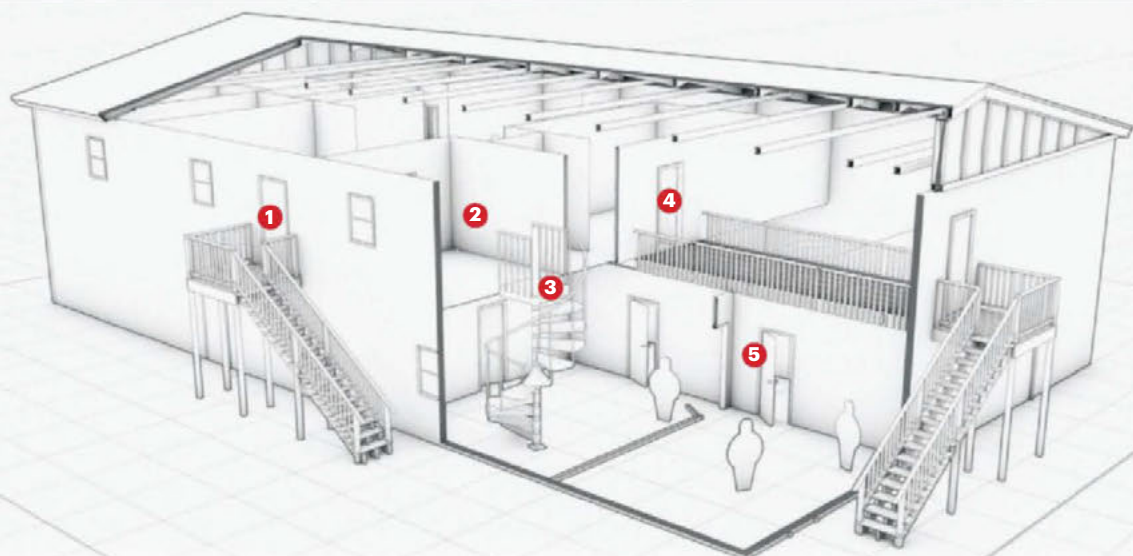


Image Courtesy Oak Grove Training Center

HOUSE CLEARING

Designed to simulate a variety of urban scenarios, the Oak Grove Training Center provides a variety of setups for training teams.

1. Students can breach doors at ground level or stack stairs and move into the upper floors.
2. Second-floor rooms simulate furnished living spaces.
3. A spiral staircase between levels forces teams to think and adapt.
4. The interior doors have multiple orientations.
5. Walls on the lower floor can be moved to create new orientations and challenges.



The non-hostage scenario is drilled first, as it allows the teams to methodically move through the space and deal with opposition as it is encountered. However, as soon as the targets are firing back and moving deeper into the structure, much of what teams have been practicing over several days goes out the window. Shooters bunch up, miss targets, shoot friendlies and otherwise behave as novices. But this reaction is expected, and shooters are brought back to the fundamentals of assessing and engaging immediate threats, sticking to their sectors of fire and moving

to points of domination within the room. A learning cycle emerges, and most of the shooters find a way to manage the stress and put hits on the proper targets while moving as a team.

The ultimate scenario comes when the teams are required to clear spaces under a time constraint. The pressure ratchets up as there isn't time to breathe and reset between rooms, to assess hallways or optimize the stack of shooters. Just when the teams think they have mastered a run, Northern Red can move the walls, put obstacles along the route, add shooters or

tighten the time standard. This forces the operators to ask hard questions about why they do what they do within their units.

For Kevin Burger, the impact of the training and the variables was significant. "For me, not having a CQB background, it was like practicing with an NFL team, learning a new playbook, and every down you switch positions and have to know what to do. The added stress of a proficient person shooting back at you seems to expose any weaknesses in your tactics." For more information, visit northernredtraining.com. **SW**

WARRIOR PROFILE TOM SPOONER

Branch Of Service: Army

Units: 82nd Airborne, 7th Special Forces Group, 1st SFOD-D (Delta)

Length Of Service: 21 years
(40 months in combat, 36 with Delta)

Northern Red's Tom Spooner is a warrior's warrior who continues to serve his country and its many veterans after his 21-year career in U.S. Army special operations.

Raised in Belle Glade, Florida, Tom joined the Army at a young age and volunteered for the infantry and the airborne. He soon found himself in combat as a member of the 82nd Airborne Division in Operation Desert Storm. Shortly thereafter he was selected for U.S. Army Special Forces and joined the 7th Special Forces Group, serving in Central and South America. Ten years into his military career, Tom was selected for the Army's most elite special operations unit, Delta Force.

After retiring from the Army and struggling with the effects of post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI), Spooner, along with other special operations soldiers, founded Elder Heart, a 501(c)(3) entity organized to raise national awareness to the tragic reality of 22 daily veteran suicides. For more information on Elder Heart, visit elderheart.org.

When did you join the Army and why?

My grandfather served in World War II, and my uncle Bobby was a Vietnam vet, and those were my heroes. They were a tremendous influence in my life. I was the 10-year-old reading *Soldier of Fortune* magazine and stories about Rangers, so all I ever wanted to do was join the military.

I joined the U.S. Army at the age of 20, and I was assigned to the 82nd Airborne Division 1/504th PIR as an 11B infantryman. During those years, I attended Airborne, Air Assault, Pathfinder and static-line Jumpmaster schools as well as Ranger school. I was then deployed for Operation Desert Storm and served in Saudi Arabia as well as Iraq, near Basra and Nasiriyah.



Tom Spooner Photo

In 1995, I volunteered and was selected for Army Special Forces. Following the Q course, I served five years as an 18C [engineer sergeant] with the 7th Special Forces group, operating across both Central and South America.

In September of 2001, I tried out and was selected for Delta, and served 10 years as part of that unit. I was part of 12 combat rotations and a total of 36 months in combat in both Iraq and Afghanistan.

What are your current duties and projects?

I am currently part owner of Northern Red, a combat tactics training company. We are a group of experienced special operations combat veterans training the next generation of servicemen, first responders and responsible armed citizens in both the fundamentals of gunfighting as well as stressful, scenario-based, close-quarters battle techniques.

When not training, I am working to help raise awareness of the 22 veteran suicides

occurring daily in this country. I am the vice president of Elder Heart, a 501(c)(3) organization that brings communities and veterans together through public art projects. We also collaborate with CP+B, a marketing agency, on a project called "Mission 22," and together we are making progress at raising awareness and a national monument recognizing veteran suicide. Among many other supporters, the Direct TV blimp carried the Mission 22 message over this year's Super Bowl.

I'm also the founder of Warrior's Heart, a six-week drug and alcohol rehabilitation program for veterans and first responders with an added emphasis on those also suffering from PTSD and mild TBI.

What was your basic weapons kit when you were serving in Delta, and what are some of your favorite guns now?

Early on we ran M4 Carbines with EO-Tech optics. Later, we switched to Knight's SR-25K rifles with Schmidt & Bender 1.5-4X scopes. I also carried a 12-inch-barreled HK416. As a sniper, I ran a 20-inch-barreled Knight's SR-25 and an Accuracy International .338 Lapua Magnum bolt gun.

Currently, I am running a Bravo Company M4 5.56mm with a Bushnell Tactical 1-6X scope as well as an 18-inch-barreled NEMO .300 Winchester Magnum precision rifle. I also regularly run a LaRue OBR as a 7.62mm precision rifle.

What advice do you have in regards to weapons training for currently active and new members of the military and LEO communities?

Everything we teach is with an armed opposition in mind. This mindset is critical, as is the concept of a two-way range to all of our armed or edged-weapon combat. So whenever we are evaluating a technique, weapons or kit, the ability to enhance the fight or cover multiple roles is primary. Gunfighters, in any role, should keep this foremost in their minds and utilize what works best for their team and level of training. **SW**

Amp up your duty shotgun with these fast-handling upgrades!

BY ROBERT JORDAN

TACTICAL SHOTGUN STOCK OPTIONS

I have carried the Remington 870 shotgun as a law enforcement officer for nearly 20 years for several different agencies, and as a civilian before that. I have lost count of the aftermarket stocks that I have used on 870s through the years to mitigate the punishing recoil of 1-ounce slugs and try to shorten the length of pull so it fits me while wearing body armor. I recently had the opportunity to round up some of what I feel are

the best aftermarket stocks available and try them out on my terms, on my duty shotgun. Here are some of today's best stock options for the tried-and-true Remington 870 shotgun.

ATI Talon T2

ATI has an enormous selection of aftermarket tactical stocks not only for the Remington 870, but also Mossberg, Winchester, Benelli and most brands currently carried by law enforcement in

the U.S. I tested ATI's Talon T2 tactical stock with the Scorpion Recoil System. The pistol grip is fat, and the backstrap is all rubber. Both helped reduce felt recoil tremendously. It positions the hand farther back from the trigger, which makes it much easier to flip the safety off. The stock, mounted on a commercial-width buffer tube, can be adjusted to six different length-of-pull positions, from 12 to 16 inches. The stock has a little bit of play in it. A



Many stock systems today, including the ATI Talon T2 (left) and the BlackHawk Knoxx SpecOps (above), reduce felt recoil and allow users to adjust the length of pull.

"I recently had the opportunity to round up some of what I feel are the best aftermarket stocks available and try them out on my terms, on my duty shotgun."



BlackHawk
SpecOps Gen II

stock system for the popular 870 shotgun. Packed with an included compact forend, the stock assembly sports a polymer buttstock that features dual watertight storage compartments that also provide an enhanced, ambidextrous cheekweld section. The stock can be adjusted from a length of pull of 14 inches out to 17 inches. The stock can fold to the left side of the receiver and locks solidly in both the open and closed positions. One simply pushes down on a top-mounted button to release it. For strength and durability, the folder housing, hinge and hinge pin are constructed from steel. For more information, visit riflstock.com or call 800-972-6390.



Ergo F93
Pro Stock

1.5-inch, removable rubber buttpad sits on the rear. It comes with an adjustable cheekrest that can be raised from 0.13 to 0.5 inches above the buffer tube. For more information, visit atigunstocks.com or call 800-925-2522.

Saver. This stock also offers a reversible, single-point, quick-detach sling swivel and an ambidextrous, single-point sling plate. The SpecOps Gen II also comes with a black, polymer forend to match the stock. For more information, visit blackhawk.com or call 800-379-1732.

Ergo F93 Pro Stock

I fell in love with Falcon Industries Ergo grips for my AR rifles over a decade ago. I still run them on a lot of my ARs. The Ergo F93 Pro Stock wins the contest for coolest-looking stock for me, hands down. It does not offer any recoil-reducing properties, but the length of pull can be adjusted from 12 to 16 inches, and it is a heavy, solid stock with a nearly 0.5-inch rubber buttpad that feels pretty good. Collapsed, it actually slides under the tube in eight length-of-pull positions with the Mesa Tactical stock adapter that I used. Ergo offers its own stock adapter that is shorter and will shorten up the length of pull even more. The best feature of this stock is that once it is adjusted, the release lever is pushed forward until it clicks and the stock becomes rock solid with absolutely no wiggle in any direction. For more information, visit ergogrips.net or call 877-281-3783.

BlackHawk SpecOps Gen II

I have owned several Knox straight stocks from before they were offered by BlackHawk and since. These have been the softest-shooting stocks I have ever owned. However, it gets tricky to fit all of that recoil-reducing technology into a tactical stock. The BlackHawk Knox SpecOps Gen II is the best attempt to date in my opinion. It has a nice, ergonomic pistol grip that makes it easy to manipulate the safety, and comes with a second set of rubber inserts to customize the fit and feel. The buffer tube size is proprietary, but the stock fits on snugly with no wiggle and offers seven length-of-pull positions, between 11.5 and 14.75 inches, for fine tuning. The stock has a large, 1-inch, removable rubber buttpad from Limb-

Choate M4 Telescoping/Folding Stock

The Choate M4 Telescoping/Side-Folding Stock for the Remington 870 shotgun offers users the combined benefits of an AR-style collapsing stock that can also fold alongside the receiver of the shotgun. The result is a highly adjustable and extremely compact tactical



Choate M4
Telescoping/Folding Stock

DUTY READY

Choate's M4 stock, ready for patrol on Remington's 5.56mm 7615P carbine.

■ By Michael O. Humphries

In addition to its M4 Telescoping/Folding Stock for 12-gauge Remington 870 shotguns, Choate Machine & Tool, Inc., also offers a variant designed for 20-gauge "lightweight" versions of the Remington 870. This offers users the option of an even smaller and more compact tactical shotgun, complemented by this adaptable collapsing/folding stock system.

An interesting side note on the 20-gauge version is the fact that it can also be fitted on Remington's 7600 series of pump-action rifles, includ-

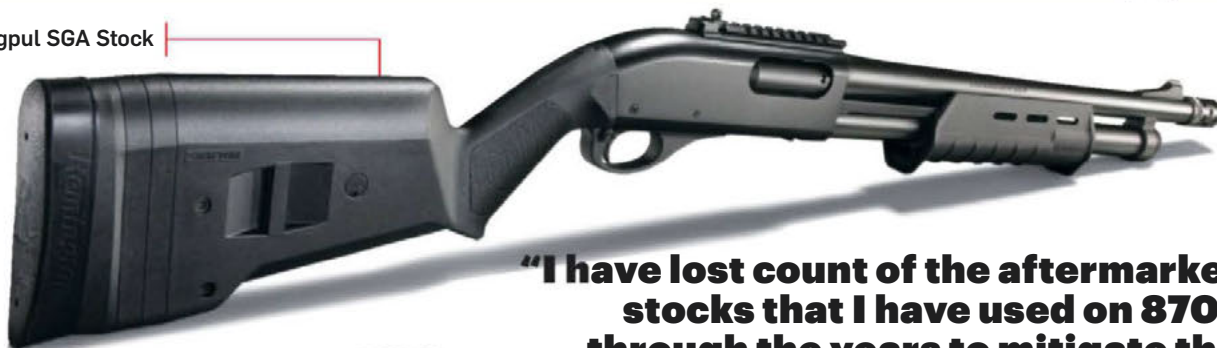
ing the classic 7615P tactical rifle in 5.56mm. This handy little rifle was designed to accept AR-pattern magazines and offers tactical users a rifle that handles much like the popular Model 870 shotgun. By attaching this Choate stock system, the 16-inch-barreled Remington 7615P becomes even more compact and portable, offering the user a handy and powerful 5.56mm carbine

that is incredibly reliable and extremely easy to use. For more information, visit riflestock.com or call 800-972-6390.

A button mounted on top of the hinge allows the Choate M4 stock to fold to the right side.



Magpul SGA Stock



"I have lost count of the aftermarket stocks that I have used on 870s through the years to mitigate the punishing recoil of 1-ounce slugs ..."



Mesa Tactical Urbino

Magpul SGA Stock

Magpul has made a name for itself producing high-quality synthetic components for a wide variety of tactically oriented firearms. Light, durable and affordable, these offerings have proven to be very popular with shooters and enthusiasts. While the company started by producing rifle magazine-based accessories, it soon expanded into stock sets for rifles such as the AR-15 and the AK, to name just a few. Recognizing a demand for its unique products for tactical shotguns, the

company soon developed the SGA Stock. This shotgun stock features an ambidextrous configuration that is modular/user-configurable for enhanced operation. It features a spacer system for length-of-pull adjustments as well as a recoil-reducing buttpad and optional cheek risers for use with optics or raised sighting systems. An enhanced grip design rounds out the package. The SGA Stock is available in black, Flat Dark Earth, stealth gray or orange. For more information, visit magpul.com or call 877-462-4785.

Mesa Tactical Urbino

Mesa Tactical is another company with a great variety of excellent aftermarket shotgun stocks for law enforcement shotguns. I tested the company's Urbino tactical stock system, which looks similar to a Benelli tactical stock but is shorter. This was the only stock that was not adjustable for length. It has a 12.5-inch length of pull, which Mesa Tactical determined is ideal for use with or without body armor because it allows the body to be squared up to the threat. The very fat, rubber-coated pistol grip sweeps to the rear. It has optional ambidextrous sling loops and a 0.75-inch LimbSaver recoil pad. My favorite feature on this stock is the firm cheekriser that adjusts quickly and easily, with no tools, from 0.25 to 1.38 inches high. For more information, visit mesatactical.com or call 714-545-3332. **SW**

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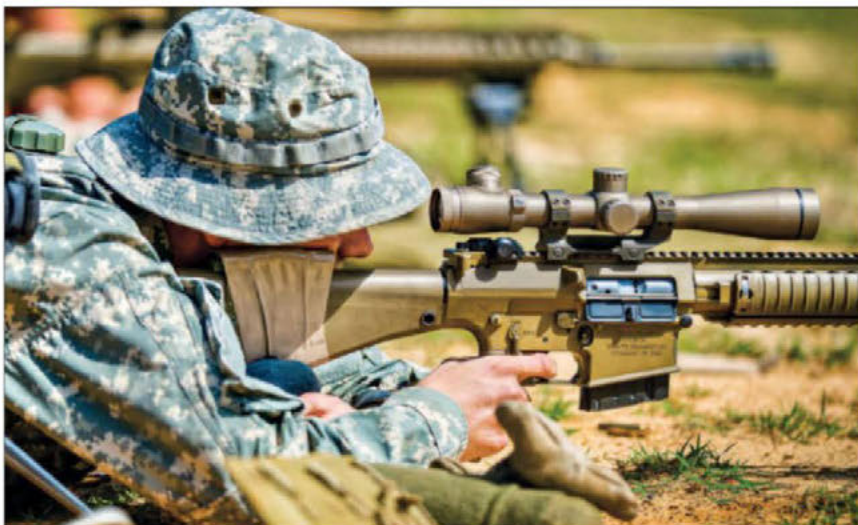
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ARMY SNIPER SCHOOL PACKING LIST

Students must have the following items when reporting to U.S. Army Sniper School:

- ID card
- Two sets of ID tags with chains
- ERB or DA Forms 2-1 and 2A
- Medical records
- Battalion or company commander's letter of recommendation
- DA Form 3822-R (mental evaluation)
- SF 88 or DD 2807-1/2808 (physical examination)
- Rifle marksmanship score card
- Five copies of orders and all amendments
- DA Form 705 APFT completed within 30 days, must show 70 percent or higher in each event. Government Travel Card if authorized.
- Beret
- Large ALICE pack with frame
- LCE or unit equivalent system
- Poncho
- Poncho liner
- Two camouflage sticks
- Two calculators
- Two padlocks (combination locks only)
- Clipboard
- Four sets of ACUs
- Five T-shirts
- Five pairs of socks (black or green)
- Two ACU caps
- Two pairs of boots (jungle or combat)
- Two sets of Army PT wear (two pairs of shorts and T-shirts, sweats, hat and gloves, winter packing list)
- Seasonal military attire
- Cold-weather gloves
- Balaclava
- Any additional cold-weather items



John Helms/U.S. Army Photo

ABOVE: A Sniper School student takes aim with an M110 during a known-distance training course. Note the cheek riser he's employed to raise his line of sight with that of the scope.



LEFT: The U.S. Army Sniper School is designed from the ground up to instill all the skills a sniper needs for success in the field.

Top Shots

Sniper candidate Sergeant Travis Browning, from Michigan, served two tours in Iraq and one in Afghanistan before he made it to sniper school. Browning said he was always envious of snipers when he came into the U.S. Army and wanted to be one. So far the training is working, too, and not just according to Browning. "Maybe he has the right things to make it as a sniper," Mangione said.

"I learned a lot during Week 4. There

was a lot of stuff I was still doing wrong. Windage and elevation adjustments were getting me, and now stalks are a challenge, but I'm becoming more well rounded and a lot more meticulous," Browning said. "I have to do all the jobs of an 11B [infantryman] and then some while having a heightened sense of awareness."

Mangione said a soldier could become the right person for the job of sniper because, in reality, 90 percent of it comes down to observation, which supports the intelligence-gathering component as well, and only 10 percent of the sniping is actually shooting. In fact, Mangione said he looks for people who are flexible and willing to learn and adapt. "The best snipers are the ones who are willing to change and are humble. Show me a prima donna and give me the opposite of that."

Despite the Hollywood hype when it comes to snipers, Mangione said successful snipers are low key. They tend to keep to themselves and stay under the radar in everything that they do. As Mangione put it, "If you walk around like you're better than everyone else, you'll think you're better than the enemy, and that can get you killed."

For more information on the U.S. Army Sniper School at Fort Benning, please visit benning.army.mil. **SW**



When more downrange power is called for, the Barrett M107 delivers long-range .50 BMG performance. A U.S. Army Sniper School student is shown here trying one out.

Susanna Avery-Lynch/U.S. Army Photo



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CARL GUSTAF M4 LAUNCHER



continued from page 12

M3 Multi-role Anti-armor Anti-tank Weapon System (MAAWS), the weapon was subsequently adopted to meet the needs of a broader slice of U.S. Army infantry units in 2011 and 2012.

Tactical Flexibility

U.S. Army sources credit the M3 MAAWS with an ability to engage lightly armored targets at ranges up to 700 meters and softer targets at up to 1,000 meters, with the possibility of reaching some target types at extreme ranges out to 1,700 meters.

Carl Gustaf ammunition options include multiple versions of high-explosive anti-tank rounds, a high-explosive dual-purpose round, an anti-structure munition, a multi-target tandem charge round, an area-defense munition (for close-in protection), a high-explosive (airburst or impact) round and both smoke and illumination rounds. The ammunition options provide users with significant tactical flexibility.

With the "502" high-explosive dual-purpose round, for example, firing in "delay mode" facilitates the engagement of enemies located inside buildings or bunkers. Conversely, twisting the round 180 degrees at loading provides an "impact mode" for engaging other targets such as lightly armored vehicles.

Another example of tactical flexibility can be seen in the "756" multi-target round, which features a large precursor charge that creates a significant hole in walls and a second charge with a fixed-delay fuse that initiates the explosive and splinters the steel casing for lethal effects behind the wall. (It should be noted that the broader U.S. Army has fielded fewer ammunition types than USSOCOM elements.)

But, in spite of its tactical contributions, the M3 MAAWS is still considered to be too heavy by U.S. operators. Clear evidence of their desire for a lighter weapon surfaced in early March 2013, when USSOCOM released "a market survey" to identify potential sources for developing a kit to lighten the M3 MAAWS. According to that announcement, USSOCOM users wanted the launcher's weight to be reduced by at least 3 pounds (with 5 pounds being optimum) as well as a shorter overall length.

Next-Gen M4

As if in direct response to the stated U.S. desires, the fall of 2014 witnessed the milestone public unveiling

ABOVE: The M4's ergonomic improvements allow soldiers to adjust the weapon to suit them. Note the adjustable shoulder rest and front grip.

BELOW: The Carl Gustaf M4 is compatible with intelligent sight systems, so operators will be able to program their munitions before firing.



and demonstration firings of the newest version of the Carl Gustaf before representatives from 22 countries assembled in Karlskoga, Sweden. The new M4 model offers further significant reductions in system weight, dropping the launcher weight by more than 6 pounds—to a total weight of less than 15.4 pounds—and decreasing the length to less than 39 inches.

Along with the weight and length improvements, other ergonomic enhancements on the M4 include an adjustable cheekrest and grip as well as new open sights designed for use by a soldier wearing a helmet with hearing protection or a communications headset.

In addition to the open plastic sights, users have the option of installing a red-dot combat sight on the weapon. Going a step further, the system has also been prepared to mount what developers term a future "intelligent sight" that would allow things like the programming of fuses on future ammunition designs in the barrel of the weapon.

One Saab representative emphasized the "optional" nature of the future intelligent sight, half-joking, "There are some customers who might say, 'We don't need any intelligent sights. We have intelligent soldiers and that's good enough.' For those customers, we can remove that sight communication capability."

Another new feature on the M4 model is an integrated shot counter that records all full-caliber round firings for the 1,000-round lifespan of the barrel. Previous models burdened users with the requirement of monitoring and recording this information, with occasionally questionable results.

A new safety catch is one more improvement, which allows a gunner to carry the Carl Gustaf M4 in a loaded configuration between battlefield firing positions.

Major weight savings on the M4 were achieved through the use of things like a titanium liner (2.43 pounds lighter than the M3's

steel liner), a carbon-fiber casing (1.77 pounds in weight savings) and a newly designed rear venturi (2 pounds in weight savings). However, even with these significant reductions, developers emphasize that the new system retains compatibility with all existing ammunition types.

Moreover, the international unveiling of the M4 coincided with the recent "first customer delivery" of a new HEAT "655 CS," or confined space, round. Characterizing it as "the latest ammunition development" in the Carl Gustaf family, Saab Dynamics representatives highlighted the 655 CS' capabilities against typical targets like main battle tanks (side attitude) and armored personnel carriers/infantry fighting vehicles. With an effective range of 300 meters, they said that it would penetrate more than 19.6 inches of armor with an aluminum/copper bi-metal cone delivering "high behind-armor effects." Most significantly, the "confined space" designation means that the new round can be fired from rooms measuring as small as 3 by 3 by 2.5 meters.

Into The Future

Saab representatives emphasized that the company is constantly looking at developments that could be applied to the 84mm weapon system, offering recent examples like plans for "smart" ammunition linked and programmed by optional intelligent sights, expanding on confined-space firing capabilities and increasing the ammunition's warhead efficiency against future anticipated target types.

"We are always looking for new warhead designs to be able to penetrate more and to have other capabilities," added one Saab representative at the M4's unveiling.

Looking even further into the future, he added that longer-term program developments will focus on increased range, increased precision, reduced reaction time and increased tactical flexibility.

While U.S. Army planners have noted that infantry units will likely retain their M3 MAAWS systems in the near term, it is believed that USSOCOM elements may be early adopters of the M4, which they are reportedly planning to designate as the M3A1. But regardless of designation, to many it will still be the "Charlie G." For more information, visit saabgroup.com. **SW**



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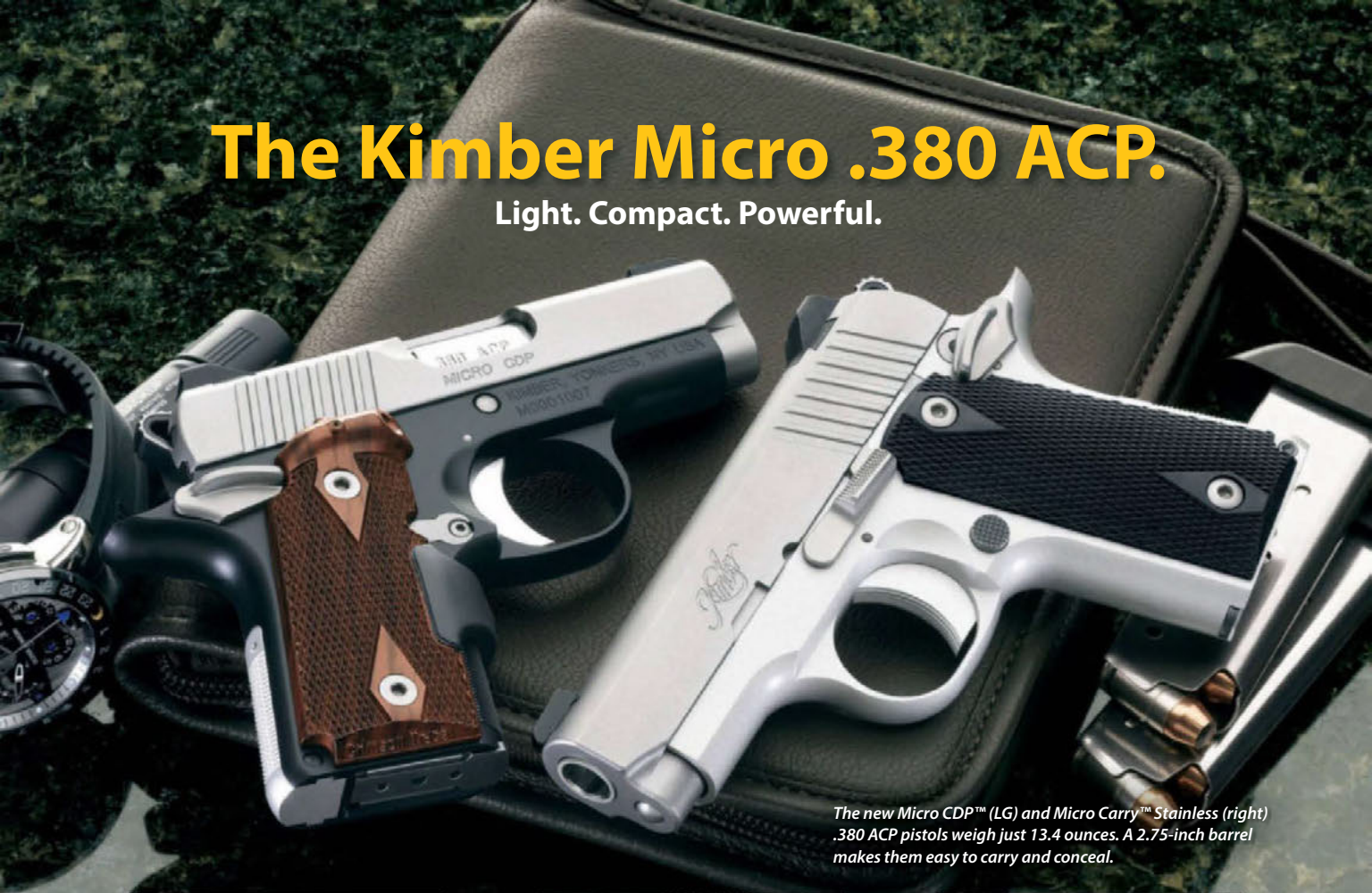
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Light. Compact. Powerful.



The new Micro CDP™ (LG) and Micro Carry™ Stainless (right) .380 ACP pistols weigh just 13.4 ounces. A 2.75-inch barrel makes them easy to carry and conceal.



Micro pistols have a stainless steel barrel for superior resistance to moisture. Steel sights are mounted in dovetails machined into the slide for strength.



1911-inspired controls include a serrated thumb safety plus a checkered slide release lever and magazine release button for safe, positive and fast operation.



All Micro models feature a single action trigger with a smooth and consistent 7-pound pull that builds confidence and increases accuracy.

Micro .380 ACP pistols bring an unequalled level of safety, dependability and performance to concealed carry. Small and light, they blend Kimber® quality with superior 1911 ergonomics and simple operation. Mild .380 ACP recoil and a smooth single-action trigger pull make them a pleasure to shoot, even for those with small hands. Frames machined from the finest aluminum ensure several lifetimes of service. Each includes a 6-round magazine, and an extended 7-round magazine is available as an accessory. Four models cover any concealed carry application. Visit a Kimber Master Dealer and see for yourself.

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